Family Coryphaenoididae

Body long, trunk short, tail long, tapering and compressed. Mouth small, protractile, terminal, subterminal or inferior; when mouth inferior snout prominent by enlarged nasals which united in median line and supported below by united preorbitals. Usually barbel at chin. Teeth mostly small, funiserial or in villiform bands in both jaws. Bases of skull very thin, head often cavernous, especially on snout and suborbital regions. Gill opening wide, gill membranes free from or narrowly joined to isthmus. Gill rakers long and lanceolate or reduced spinescent tubercles. Gills 4, slit behind last sometimes reduced. Pseudobranchiae usually glandular and reduced or absent. Branchiostegals 6 to 8. Air bladder usually present, physoclistic. Scales usually ctenoid, carinate or spiniliferous,

imbricate, seldom cycloid. Lateral line present, axial. Inciferous canals of head well developed. Short anterior dorsal with second simple ray usually pungent to spine like, followed by several branched rays. A long, low, posterior dorsal, confluent around tail with long anal, which usually deeper or high. Pseudocaudal may be developed, though true caudal normally absent. Paired fins present. Pectorals with 3 to 6 pterygials. Ventrals below or little behind pectorals, with 6 to 12 branched rays and usually preceded by short simple ray.

These fishes are usually known as the Macruridae or Macrouridae, though as Macrurus has been found to give way to the earlier Coryphaenoides the family name Coryphaenoididae follows. The attempt here is to include all the known species.

The macrurids are found in all seas of the globe, in depths of from 70 to upwards of 5000 meters, though living chiefly in tropical and temperate regions. The macrurids doubtless evolved in more recent geological epochs, their affiliations suggesting the the more littoral gadoids. As Weber and Beaufort say "They are probably still in course of local development and no conspicuous breaks have yet been established by dying out of intermediate forms to separate them in more conspicuous groups".

Analysis of Genera

a.' First gill arch without membranous fold restricting first gill slit; gill rakers lanceolate; second dorsal ray not enlarged or spine like; hind part of dorsal more developed than hind part of anal.

b.' Two separate dorsal fins.

c.' Macruronina. Vomerine teeth present; jaw teeth uniserial or biserial; anal mostly elevated forward.

d.' Front of anal lobate; vent nearly between ventrals; ventral area striate. Steindachneria.

d.^{2} Front of anal not lobate; vent posterior, close before anal; no ventral striae. Macruronus.

c.^{2} Bathygadinae. No vomerine teeth; teeth in bands on jaws; anal uniformly low.

Caudal tip white. Ventrals lemon yellow, darker at base than in front.

4861 and 17135. Murcielagos Bay, Mindanao. August 21, 1909. Length 90 to 100 mm.

3906. Opol, Mindanao. August 4, 1909. Length 83 mm.

1 example. Pawatik Harbor, Makyan Island. November 28, 1909. Length 90 mm.

4851 and 4852, 22024. Tanpan, Tapa Island. September 20, 1909. Length 52 to 90 mm.

4741 and 4742. Tilak Island. September 12, 1909. Length 82 to 112 mm.

4709. Port Galera, Mindoro. October 27, 1909. Length 96 mm.

742. Port Palapag. June 3, 1909. Length 70 mm.

e.' Mouth terminal; no lateral scaleless nuchal fossa; scales cycloid, not modified at dorsal and anal bases; gill rakers long, slender; second dorsal much higher than anal. Bathygadus.

e.² Mouth inferior, snout greatly extended; scaleless fossa each side of nape; scales rough, strongly modified series along front parts of dorsal and anal bases; second dorsal little higher than anal. Trachyrinchus.

b.² Lyconinae. Dorsal single, front rays mostly elevated; head moderate; few enlarged canines; teeth on vomer; mouth terminal; no barbel; scales

dark olive, becomes black after death. Interorbital purple slate. Opercular flap black. Dorsals and anals broadly margined purple, without cross bars except terminally 2 or 3 obscurely; body of fins darker than side of trunk; purplish band at dorsal and anal bases. Caudal olivaceous, probably whitish in life, color clearly contrasted from caudal peduncle at base of fin; margin within fork purple. Pectoral rays purple basally, olive yellow terminally, membranes more or less hyaline. Ventral blackish olive, front and edge purplish. Caudal spine with black socket.

cycloid; ventrals not reduced.

Lyconus.

b.[3] Macruroidinae. Dorsal single, uniformly low; head very massive, soft; teeth in bands, in jaws only; mouth inferior, below and behind eye; ventrals very small or absent.

f.[1] Ventrals small, rays 5; pectoral 25; mouth behind eye; gill membranes free from isthmus; gill rakers long; pseudobranchial present. Squaloguadus.

f.[2] Ventrals absent; pectoral 16; mouth below eye; gill membranes joined to isthmus; gill rakers short; no pseudobranchiae.

Macrouroides.

A 1234. Gomantong Island. December 3, 1909. Length 383 mm.

A 1081 and A 1082. Maitara Island. November 26, 1909. Length 290 to 393 mm.

8369. Malapascua Island. March 16, 1909. Length 405 mm. Body purplish brown, fading greenish anteriorly above, rust umber medially and nearly orange posteriorly, with undulating slate blue stripes on scale rows. Side of head and breast nearly covered by bright purple stripes, interspaces somewhat olivaceous. Large purplish shade in horse-shoe from just above corner of gill opening downward to midway between point of opercle and pectoral base; enclosed area very

a.[2] First gill arch with membranous fold restricting first gill slit; gill rakers tubercular; second dorsal ray modified spine, often serrate on front edge; anal more developed than second dorsal; teeth in jaws only; no pseudobranchiae.

g. Coryphaenoidinae. Pectorals not pedunculated; pectoral actinosts 4 to 6.

h. Branchiostegals 6; gill membranes broadly united, scarcely extended forward ventrally; lower gill rakers less than 15; scales usually moderate; no striate regions on under side of trunk; vent usually close

and purple stripe along base; hind rays purplish and a few bars of dusky or bluish near posterior margin. Anal blackish, with purple border and well defined dusky orange bars 5 or 6 across terminal third of fin. Caudal olivaceous, purplish in forks, base white and edges of lobes black. Pectoral dusky lemon yellow, upper rays yellow terminally. Ventrals blackish. Caudal spine with black rocket.

8716. Batan Island. June 5, 1909. Length 250 mm.

8755. Between Parone and Jesus Points, Luzon. June 21, 1909. Length 273 mm.

before anal, not or rarely preceded by naked area on fossa; large, wide ranging species.

i'. No barbel; premaxillary teeth unequal, in narrow band separated by interspace from marginal series of small teeth, of which one enlarged anterolateral canine; mouth terminal; anal not much higher than second dorsal; Antarctic.

Cynomacrurus.

i². Barbel always present; no canines; mouth not terminal; anal much

8152. Alibijiban Island, Ragay Gulf, Luzon. March 6, 1909. Length 325 mm. Sides dark umber brown, fading to series of very narrow slaty stripes through center of scale rows, with yellowish or olive interspace somewhat greater than stripes; yellowish interspaces orange posteriorly and anteriorly obsolete. Top of head and interorbital with purplish shades, latter much striped with olivaceous. Breast with olive and purple undulating stripes, merging with blackish of abdominal regions. Lemon yellow tints about eye. Purplish horse-shoe behind upper angle of gill opening. Dorsals olive, fading greenish olive, edge bright purple

higher than dorsal.

f.' Snout little extended; no strongly marked ridges on head and suborbital ridge not extending to preopercle; dorsal spine trenchant on front edge, usually serrate. Coryphaenoides.

f.² Snout usually greatly extended; head with prominent ridges furnished with modified scales and suborbital ridge extended to preopercle; dorsal spine smooth, rounded anteriorly. Coelorhinchus.

h.² Branchiostegals 7; gill membranes narrowly united, gill opening extended forward ventrally; lower gill rakers more than 15;

52493 U.S.N.M. Samoa, Bureau of Fisheries. Length 153 to 207 mm. 4 examples.

56998 U.S.N.M. Pago Pago, Samoa. Bureau of Fisheries. Length 205 to 220 mm. 2 examples.

scales large, thin, smooth or weakly denticulated; ventral regions with fine, parallel lines, alternating dark and silvery; vent close before anal, midventral line with 2 lens like bodies connected by black ridge on wall of abdominal cavity, one close before vent, other in advance of ventrals; tropical fragile species less than foot long. Hymenocephalus.

h.[3] Branchiostegals 7; gill membranes bradly united, little extended forward ventrally; lower gill rakers less than 15 on second arch; scales small; no ventral striae; vent remote from anal, preceded by naked areas; tropical or subtropical.

402. Port Palapag. June 3, 1904.
Length 128 mm.

715. Tagnak Island. January 7, 1904.
Length 155 mm.

456 and 1740 3. Talissi Island. November
7, 1904. Length 486 111 mm.

4943. Tataan, Tawi Tawi Group.
February 20, 1908. Length 160 mm.

6448. Tilis, Lutong Island. July 14, 1908.
Length 216 mm.

261. Tutu Bay, Jolo, second anchorage.
September 19, 1904. Length 153 mm.

A1269. Ulai, Boano Island, Dutch East
Indies. December 9, 1904. Length 175 mm.

A1388. Labuandata Bay, Celebes. December
18, 1904. Length 209 mm.

9717. Una Una Road, Binang Buang
Island, Celebes. November 17, 1904. Length
146 mm.

ls.' mouth large, subterminal; upper jaw less than 1/3 head; gill membranes united below orbit.

l.' Premaxillary teeth biserial; mandibular teeth uniserial; second dorsal spine smooth, rounded. Malacocephalus.

l.² Premaxillary teeth in narrow villiform bands; second dorsal spine more or less serrate, front edge trenchant. Ventrifossa.

ls.² mouth small or moderate; upper jaw 3 or more in head; gill membranes unite below preopercle ridge (except rarely in aberrant Lionurus).

m.' No row of enlarged scales along second

928. Panabutan Bay, February 6, 1908. Length 150 mm.

5920. Parang, Mindanao. May 23, 1908. Length 245 mm.

454. Parang, Mindanao. May 23, 1908. Length 178 mm.

1193. Port Alupan. March 17, 1909. Length 170 mm.

525 and 526. Port Galera, Mindoro. June 9, 1908. Length 160 to 184 mm.

6382. Port Jamelo. July 13, 1908. Length 220 mm.

632, 10298, 10465. Port Maricaban. July 21, 1908. Length 153 to 170 mm.

1020 and 3597. Port Matalvi, Luzon. November 22, 1908. Length 157 to 167 mm.

7275. Port Matalvi. November 23, 1908. Length 174 mm.

3879. Port Pakapag. June 2, 1909. Length 115 mm.

second dorsal base;
bones of head firm, sensory
canals moderate; scales
all imbricate; second
dorsal spine trenchant,
serrate.

m.¹ Snout moderately
extended. Lionurus.

m.² Snout greatly
extended. Mataeocephalus

m.² Enlarged modified
scales only anteriorly
basal on second dorsal
and anal; head normal,
bones firm; scales not
imbricate, diamond
shaped; second dorsal
spine smooth, rounded;
snout subconic, slightly
projecting. Trachonurus.

728. Adibijaban Island. March 6, 1909. Length 153 mm.

4864 to 4866. Alimanao Bay, Burias Island. March 5, 1909. Length 185 to 200 mm.

768. Basin Harbor. March 7, 1909. Length 185 mm.

3926 and 3927. Laxisigan Island. January 2, 1909. Length 71 to 115 mm.

5376 and 5395. Cebu market. April 5, 1908. Length 178 to 180 mm.

2001 and 3895. Camaman and Di Amil Islands. September 27, 1909. Length 36 to 77 mm.

5163. Jolo market, Jolo. March 6, 1908. Length 235 mm.

4863. Murciélagos Bay, Mindanao. August 21, 1909. Length 100 mm.

394. Near Palag Bay, Luzon. June 16, 1909. Length 88 mm.

mv.[3] Scales enlarged along dorsal base; head massive, skull with high crests; snout wide, high; scales with erect spinules; dorsal spine serrate. Cetonurus.

-g.[2] Ateleobrachiinae. Pectoral strongly pedunculated; first dorsal and ventral fins extended. Ateleobrachium.

1278. Alibijaban Island. March 6, 1909. Length 153 mm.

4864 to 4866. Alimango Bay, Burias Island. March 5, 1909. Length 150 to 200 mm. Bars orange, not yellow as shown in Bleeker's plate. Bars about eye bright blue. Snout and chin orange, head otherwise dusky, also not yellow as shown by Bleeker. Breast and belly soiled yellowish white. Spinous dorsal orange, orange body bars change yellow at fin base, then greenish, crossing fin diagonally. Anal orange, bars purple. Soft dorsal purple; black lateral band changing to purple along dorsal base. Tips of dorsal and anal bright blue. Tail bright yellow. Paired fins dusky yellow.

Genus †Steindachneria (Goode and Bean

†Steindachneria Goode and Bean, in Agassiz, Three Cruises of the Blake, vol. 2, p. 26, 1888. (Atypic. Type †Steindachneria argentea Goode and Bean 1895 affixed.)

†Steindachneria Goode and Bean, Oceanic Ichth., p. 419, 1895. (Type †Steindachneria argentea Goode and Bean, monotypic.)

†Steindachnerella Eigenmann, Amer. Nat., vol. 31, p. 159, Feb. 1897. (Type †Steindachneria argentea Goode and Bean, virtually. †Steindachnerella Eigenmann proposed to replace †Steindachneria Goode and Bean.)

Body compressed, with long tapering tail. Trunk short, less than head. Head moderate, bones soft and cavernous. Snout short. Eye large, anterior. No mandibular barbel. Mouth large, terminal. Teeth biserial, outer row

well enlarged. Vomerine teeth present. Gill opening wide, membranes united anteriorly and free from isthmus. Gill rakers lanceolate. No pseudobranchiae. Branchiostegals 7. Scales deciduous, thin, cycloid, present on head. Both dorsals elevated anteriorly and first simple ray of first fin elongated. Anal with elevated anterior lobe, greater portion of fin very low. Paired fins below first dorsal.

An interesting genus, noted for its combination of characters, as soft cavernous skull, vomerine teeth, vent before first third of body and the elevated front anal lobe.

Depth 1 3/5 to 1 2/3; head 2 1/2 to 2 3/4, width 2 2/5 to 2 1/2. Snout 2 1/3 to 2 2/3 in head; eye 3 to 4 1/4, 1 1/6 to 1 3/5 in snout, little greater than interorbital to equal with eye; maxillary 3/5 to 2/3 in snout, 3 3/5 to 3 4/5 in head; interorbital 3 2/5 to 4, broadly convex. Gill rakers 4+14, short pointed 1/5 of gill filaments, which 1 3/5 in eye. Scales 29 or 30 between gill opening and caudal base; tubes 26 to 30 in lateral line, 6 to 8 scales above lateral line and 15 to 18 below. Scales with with 14 to 21 basal radiating striae, more parallel and marginal with age, and 1 to 7 incomplete auxiliaries; apical denticles 113 to 322, with 10 to 15 transverse series of basal elements; circuli very fine.

D. XII or XIII, 23, I or 24, I, last spine 1 2/3 to 2 1/8 in head, 1 1/3 in young, to 1 7/8 1/2 in combined head and body with age; A. III, 20, I or 21, I, third spine 1 7/8 to 2, ninth ray 1 1/3 to 1 2/5; least depth of caudal peduncle 3 1/10 to 3 2/5; caudal 1 2/3 to 1 4/5, hind edge broadly convex; pectoral 1 1/5 to 1 1/4; ventral 1 1/4 to 1 2/5.

Brown, lighter on breast and abdomen. Dim front of back 5 parallel somewhat diffuse-deep brown lines slope up from head obliquely to spinous dorsal. From last line 1 parallel oblique-deep brown lines slope down toward anal. Broad black band from supraoccipital

Steindachneria argentea Goode and Bean

Steindachneria argentea Goode and Bean, Oceanic Ichth., p. 419, pl. 101, fig. 351, 1895 (type locality: lat. 29°14'30" N., long. 88°09'30" W., off Mississippi Delta, 68 fathoms). — Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 3, p. 2568 (1898) (compiled). — Gilbert and Hubbs, Proc. U. S. N. Mus., vol. 51, p. 142, 1916 (reference).

Depth 7 1/4; head 5 1/8, width 2 1/4. Snout 4 1/5 in head from snout tip; eye 3 1/2, greater than snout or interorbital; maxillary reaches 2/3 in eye, length 1 9/10 in head from snout tip; outer row of 28 slightly larger curved teeth above and inner band of close set more numerous short simple teeth, below similar teeth with outer row of 13 and few very short inconspicuous ones forming

inner row; interorbital 5 1/3 in head, low, uneven. Gill rakers 5+14, lanceolate, slender, on first arch, 2 3/4 in eye; gill filaments 7/8 of gill rakers.

Scales (115 on figure) 1-42, in lateral line, of which 22 forward of vent; 6 above, 15 below, 23? predorsal. Scales very deciduous, most all fallen. Head scaly, though now most scales fallen, equal to those on body.

D. I, 8 — 123, first simple ray long filament 3 2/5 in total fish; A. I, 9, 113, first branched ray 1 4/5 in total head length; pectoral rays I, 14, equals head from snout tip; ventral rays I, 7, first ray filamentous or 1 4/5 in total head length.

vol. 1, 1895, p. 485 (Luzon, Manila, Zavotas).

Chaetodon lunaris Gray, Cat. Fish. Gronow,
vol. 2, 1854, p. 70. India.

Back brown, sides silvery gray. Under surface of head and belly leaden to dark neutral gray. Iris silvery white. Inside mouth and gill opening black. Fins brownish, paler than body color.

Gulf of Mexico.

U. S. N. M., No. 37350. Lat. 29°14' 30" N., long. 88°09'30" W., Gulf of Mexico. In 68 fathoms. February 11, 1885. Albatross Collection (D. 2378). Length 233 mm. Type.

11 (Guam), p. 27 (Honolulu), p. 33 (Samoa).
— Fowler and Ball, Bishop Mus. Bull.,
no. 26, 1925 (1926), p. 17 (Johnston Island,
French Frigate Shoals, Wake Island)
— McCulloch, Records Australian Mus., vol. 15, no. 1, 1926, p. 35 (Pearl Reef, Holbourne Island, Chuuk, New Hebrides, Solomon Islands, Vanuatu, Fiji, Samoa, Papua.)
Chaetodon auriga var. setifer Day, Fishes
of India, pt. 1, 1875, p. 106, plate 27, fig. 3
(Nicobars).
Tomacentrus filamentosus Lacépède, Hist.
Nat. Poiss., vol. 4, 1803, p. 511 (on Bloch).
Chaetodon sebanus Cuvier, Hist. Nat. Poiss.,
vol. 7, 1831, p. 24 57. East Indies, Timor, Guam,
Tonga, Mauritius, Batavia.
Chaetodon mesogallicus Cuvier, l.c., 63 48. Mauritius
— Kaup, Arch. Naturges., abth. 1, 1860, p. 154
(Bourbon). — Guichenot, Notes I. Reunion, vol.
2, 1862, p. 36. — Bleeker, Ned. Tijds. Dierk.,
deel 4, 1867, p. 117 (China). — Von Martens, Preuss.
Exped. Ost Asien, 1876, p. 388 (Amboina). —
Günther, Rep. Voy. Challenger, vol. 1, 1880, p. 27
(Botany Bay). — Elera, Cat. Faun. Filip.,

Genus Macruronus Günther

Macruronus Günther, Zoological Record, vol. 8, p. 103, 1871 (1873). (Type Coryphaenoides novae zelandiae Hector,

Body compressed, with moderately long tail. Trunk longer than head. Head moderate, compressed. Snout rather pointed. Eye large, little before middle of head. Mouth wide, terminal. No mandibular barbel [described and figured by Hector and Hutton]. Upper teeth biserial, outer series and single lower series strong. Gill membranes slightly united in front. Gills 4, gill filaments well developed. First gill arch free, with long lanceolate gill rakers. Branchiostegals 7. Scales cycloid. Dorsals continuous, first little elevated, separated from second by deep notch. Anal slightly elevated in front. Paired fins below first dorsal.

(not located)

982

Macruronus magellanicus Lönnberg

Macruronus magellanicus Lönnberg

— Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (name).

Macruronus novae-zelandiae (Hector)

Coryphaenoides novae-zelandiae Hector, Trans. New Zealand Inst., vol. 3, p. 136, pl. 18, fig. 1, 1871 (type locality: off Ward Island in Port Nicholson). — Hutton, Fishes of New Zealand, p. 49, pl. 8, fig. 79, 1872 (Cook's Straits; Wellington Harbour).

Macrurus novae-zelandiae Günther, Rep. Voy. Challenger, vol. 22, p. 157, 1887 (New Zealand; Tasmania; Hessier Channel).

Macruronus novae-zelandiae Goode and Bean, Oceanic Ichth., p. 418, 1895 (copied). — Waite, Rec. Canterbury Mus., vol. 1, no. 1, p. 18, April 25, 1907 (reference). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference). — McCulloch, Austral. Mus. Mem., no. 5, pt. 1, p. 128, June 29, 1929 (compiled).

Coryphaenoides tasmaniae Johnston, Proc. Roy. Soc. Tasmania, p. 143, 1882 (1883) (type locality: Kangaroo Bluff, Tasmania).

Genus Bathygadus Günther

Bathygadus Günther, Ann. Mag. Nat. Hist., ser. 5, vol. 12, p. 23, 1878. (Type Bathygadus cottoides Günther, monotypic.)

Melanobranchus Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 11, p. 459, 1903.

Regania Jordan, in Jordan and Starks, Bull. U. S. Fish Comm., vol. 22, p. 604, 1902 (Aug., 1904). (Type Regania nipponica Jordan and Gilbert, monotypic.)

↓

?Body massive anteriorly, tapering in rather long, though small, compressed tail. Head large, short, robust, with elevated or hump-like nape. Snout short, wide, obtuse. Eye small, advanced. Mouth very large, terminal, lateral, mandible usually protruded

Genus Bathygadus Günther

Bathygadus Günther, Ann. Mag. Nat. Hist., ser. 5, vol. 12, p. 23, 1878. (Type Bathygadus cottoides Günther, monotypic.)

Melanobranchus Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 11, p. 459, 1903. (Type Bathygadus melanobranchus Vaillant, monotypic.)

Gadomus Regan, Ann. Mag. Nat. Hist., ser. 7, vol. 11, p. 459, 1903. (Type Bathygadus longifilis Goode and Bean, monotypic.)

Body massive anteriorly, tapering in rather long, though small, compressed tail. Head large, short, robust, with elevated or hump-like nape. Snout short, wide, obtuse. Eye small, advanced. Mouth very large, terminal, lateral, mandible usually protruded

Refer 5, 1923, p. 54 (Viti Island; New Guinea).

D. XIV, 17 to 19; A. IV or V, 15 to 17. Scales 43 to 45. Yellow. Dark ocular band and large ellipsoid blackish blotch below last dorsal spines and front of soft dorsal. No dark blotch on caudal

in front, though jaws even. Teeth villiform in both jaws, in bands, usually extended entire length of jaws. No teeth on palate. Mandibular barbel present or absent. Bones of head soft, cavernous, without prominent ridges. Gills 3 1/2 or 4, small slit or none behind last arch. Gill rakers lanceolate, long on first branchial arch, width free; gill filaments short. Gill membranes free from isthmus. Branchiostegals 6 or 7. Scales deciduous, simple, thin, with fine circuli. Dorsal fins two, continuous or separate, front rays of second fin not shortened, gradually diminish in length on narrow posterior part of tail. Anal rays feeble, low throughout. Paired fins well developed.

Bathygadus antrodes (Jordan and Gilbert)
Melanobranchus antrodes Jordan and Gilbert,
Bull. U. S. Fish Comm., vol. 22, p.
606, pl. 4, fig. 1, 1902 (Aug. 1904) (type
locality: ~~[illegible]~~ Sagami Bay, ~~[illegible]~~ Japan). — Jordan, Tanaka, Snyder,
Journ. College Sci. Tokyo, vol. 33, p. 401,
~~[illegible]~~ (fig. 380 copied) 1913 (compiled).

Bathygadus antrodes Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. (142)
149, 1916 (off Shio Misaki; off Omi
Sabi; Sagami Bay, 440 to 712 fathoms);
Bull. U. S. Nat. Mus., no. 100, vol. 1,
p. 380, 1920 (diagnosis in key).

Depth 6 to 6 4/5; head 4 3/5 to 4 3/4, width 2 to 2 1/8. Snout 3 1/6 to 3 3/4 in head from snout tip; eye 5 2/3 to 6, 1 3/5 to 1 2/3 in snout, 1 3/4 to 2 1/8 in interorbital; maxillary reaches opposite hind eye edge, length 1 4/5 to 1 7/8 in head from snout tip; teeth uniform, short, 6 rows irregularly and transversely above, 3 below; interorbital 2 2/3 to 3 2/5, moderately high, unevenly convex. Gill rakers 6 + 20, lanceolate, slender on ~~second~~ first arch, 1/2 in eye; gill filaments 1/2 gill rakers.

Scales 110 in medial or axial lateral series, of which 25 extend till opposite vent; 5 or 6 above, 12 below; 36? predorsal. Scales thin and very caducous, most all

A1432. Kapoposang at Ford. December 28, 1909. Length 188 mm.

508. Lampao Point. June 24, 1909. Length 183 mm.

9198. Inahinog, Camiguin Island. August 3, 1909. Length 235 mm.

9090. Malhon Island. July 27, 1909. Length 205 mm.

6250. Medio Island, Galera Bay, Mindoro. June 9, 1909. Length 200 mm.

A698. Ai-Ami Island. September 26, 1909. Length 203 mm.

A627, 1 and A628. Tinabue Island. September 22, 1909. Length 192 to 204 mm.

19552. Tinjaan Island. September 21, 1909. Length 106 mm.

A754. Tipadan Island. September 28, 1909. Length 198 mm.

A457. Tulnalutan Island. September 9, 1909. Length 21 mm.

fallen. Scales similar on head to those on body. Scales simple, without striae; circuli moderately fine and complete.

D. II, 8 — 101 to 104, second simple ray extended and filamentous, sometimes long as head; A. 94?, lower than dorsal; no caudal; pectoral rays I, 13 or I, 14, first or second ray often filamentous, sometimes long as head; ventral I, 9, first ray elongate and long as head.

Brown, often with dusky shades. Iris gray. Inside gill opening, mouth and belly blackish. Fins usually darker brown than body.

Japan. The original figure of Jordan and Gilbert is comparatively

including all of first spines, sulphur yellow; central cadmium streak extending from base of produced ray and coloring all outer portion, behind narrow sulphur band, terminally narrower white, black and hyaline border. Anal marked as dorsal, black band beginning about fourth or fifth soft ray and very narrow half its distance, when expanded to rounded head; spines sulphur yellow and white; black and hyaline border as in dorsal. Caudal nearly entirely hyaline, rays slightly dusky, somewhat orange basally, central strip and on fin edges. Paired fins cadmium.

560. Binang Bungang Island. November 18, 1909. Length 155 mm.

A709. Danawan Island. September 27, 1909. Length 167 mm.

crude, though based on the type is without fin filaments. It thus fails to portray the characteristic appearance of the species. The Hawaiian material included below seems to be this species.

Chaetodon semeion Bleeker.

Chaetodon semeion Bleeker, Nat. Tijds. Ned. Indië, deel 8, 1855, p. 450. Cocos Keeling Islands, Indian Ocean. — Günther, Cat. Fish. Brit. Mus., vol. 4, 1860, p. 7 (copied). — Günther, Journ. Mus. Godeffroy, Hamb. 2-3 heft 5-6, 1874. p. 39, plate 28 (Society Islands and Samoa). — Fowler, Proc. Acad. Nat. Sci. Phila., 1899. p. 492 (Thornton Island). — Jordan and Seale, Bull. Bur. Fisheries, vol. 25, 1905 (1906), p. 343 (Cebu). — Ahl, Arch. Naturges., band 89, abth. A, heft 5, 1923, p. 69 (Samoa, New Pommerania, New Guinea). — Fowler and Ball, Bishop Mus. Bull., no. 26, 1925 (1926), p. 17 (Wake Island).

Tetragonoptrus (Rabdophorus) semeion Bleeker, Atlas Ichth. Ind. Neerl., vol. 9, 1877. p. 37, plate (12) 374, fig. 5 (Cocos, Celebes, Goram).

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U. S. N. M., No. 50932. Manazuru Zaki, N. 70° W. 4.7 m., off Honshu Island, Japan. In 501 to 749 ~~250 to 410~~ fathoms. May 5, 1900. Albatross Collection (3696). Length 265 mm. Rather poorly preserved. Type.

U. S. N. M., No. 51442. Sagami, Japan. Albatross Collection. (Nos. 1700 and 1703.) Length 148 to 410 mm. 2 examples.

U. S. N. M., No. 77241. Albatross Collection (3916). Diamond Head Light N. 40° E. 9.7', north coast of Molokai Island. In 299 to 330 fathoms. May 6, 1902. Length 310 mm.

Albatross Collection (3917) Diamond Head Light, N. 50° 30' E. 10.3' In 294 to 330 fathoms. May 6, 1902. Length 245 mm.

Albatross Collection (3918). Diamond

1077 [1643]. Batanaman Island. June 12, 1909. Length 150 mm.

514 [1553]. Biri Channel, Balicuatro Island. June 2, 1909. Length 140 mm. General color cadmium yellow. Forehead and snout posteriorly dusky. Ocular bar equal to eye above, somewhat broader below, extends across interopercle but not on chest. Black central band from fourth from last dorsal spine to vertical edge of fin, somewhat yaw shaped, rounded on vertical portion. Un sides behind shoulder each scale with small black dot in central margin, these extending on soft dorsal base to black band; space above anal base and caudal peduncle immaculate, also breast and belly from level of pectoral to front of anal without spots. Dorsal spines and membranes at tips,

Head Light, N. 63°, E. 8'. In 257 to 294 fathoms). May 6, 1902. Length 218? mm) to end of broken tail.

Albatross Collection (3919). Diamond Head Light, N. 84°, E. 7.9'. In 220 to 257 fathoms). May 6, 1902. Length 300 mm.

U. S. N. M., No. 77242. Lat. 25°07' N., long. 170°50' W., between Honolulu and Laysan). Depth not sounded. May 15, 1902., Length 285 mm.
Albatross Collection (3930).

U. S. N. M., No. 77243. Laysan Island Light, N. 77°, E. 8.6'. In 253 to 590 fathoms). May 19, 1902.

Albatross Collection (3944). Length 350 mm.

below lateral line slightly inclined, likewise series of dots. Soft dorsal and anal edged narrowly white, each with dusky submarginal line. Black median band diffuse and narrow at first beginning on spinous dorsal posteriorly, then extends gradually expanding to last dorsal rays. Black blotch on last anal rays subbasally and narrowed forward. Caudal and paired fins uniformly pale brown.

Keeling Islands, East Indies, Polynesia.

U. S. N. M., No. 77244.

Length 191 to 202 mm. 2 examples.

U. S. N. M., No. 77245.

Albatross Collection.

Length 363 mm.

U. S. N. M., No. 77246.

In 649 fathoms.

Albatross Collection (4971). August 30, 1906. ✓ Length 218 mm. to end of broken tail.

depth 1 3/5 to 1 3/4; head 3 to 3 1/4, width 2 to 2 1/5. Snout 2 3/5 to 2 3/4 to 3 in head; eye 3 7/8 to 4 1/2, 1 2/5 to 1 2/3 in snout, 1 1/6 to 1 1/2 in interorbital; maxillary 1/2 to 3/5 in snout, 3 1/2 to 4 in head; interorbital 3 2/5 to 3 1/2, convex. Gill rakers 3 + 14, short points, 1/8 of gill filaments, which equals eye.

Scales 30 or 31 between gill opening and caudal base; tubes 28 to 32 in lateral line; 8 or 9 scales above lateral line, 13 or 14 below. Scales with 11 or 12 basal radiating striae; apical denticles 145 to 160, with 23 to 35 series of basal segments transversely; circuli fine.

D. XIII or XIV, 24, I or 25, I, last spine 2 1/5 to 2 1/4 in head, second elongated ray 1 7/8 to 2 1/8, A. III, 21, I or 22, I, third spine 2 to 2 3/5 in head, tenth ray 1 5/6 to 2; least depth of caudal peduncle 3 to 3 2/5; caudal 1 to 1 1/5, deeply emarginate with upper and lower outer pointed points; pectoral 1 1/3 to 1 2/5; ventral 1 2/5 to 1 1/2.

Brown, little paler on abdomen. Broad black band from predorsal to eye and down across cheek where wider, though not extended on chest or breast. Each scale in body, beginning behind vertical of pectoral, base with small dusky apical dot, also not on caudal peduncle or anal base; an row of scales

Bathygadus arcuatus Goode and Bean

Bathygadus arcuatus Goode and Bean, Bull. Mus. Comp. Zool., vol. 12, p. 158, 1886 (type locality: off Martinique, 334 fathoms); Oceanic Ichth., p. 421, 1895 (type; off Martinique, 420 fathoms; not Station 88). — Jordan and Evermann, Bull. U. S. Nat. Mus., No. 47, pt. 3, p. 2564, 1898 (copied). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 395, 1899 (reference). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 392, 1906 (reference).

Gadomus arcuatus (Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1917 (reference); Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 392, 1920 (diagnosis in key).

Depth 5 1/3; head 5 to 5 1/4, width 1 3/4. Snout 3 in head; eye 5 4/5, 2 in snout, subequal with interorbital; maxillary reaches 7/8 to eye, length 1 4/5 in head; mandibular barbel 1 2/3; teeth extremely minute, close set, compact, form broad area above, lower similar though bands half as wide; interorbital 6 1/5 in head, low, level. Gill rakers 5 + 19, slender on first arch, 1/2 of eye; gill filaments 4/5 of gill rakers.

Scales 138 to 140 in lateral line, of which 18 to 20 forward of vent, 8 above, 10 or 11 below, 38 predorsal. Scales very caducous, most all lost, largest on cheeks and opercles. Scales without striae; ~~Loom~~. circuli fine, form angles basally at median horizontal axis.

Chaetodon decoratus Ahl.

Chaetodon decoratus Ahl, Arch. Naturges., band 89, abth. A, hefo 5, 1923, p. 71, plate 1, fig. 6. Yokohoma, Japan.

Apparently closely related to Chaetodon semeion but with a black band across caudal peduncle. Though the following formula is given it is not sufficiently distinct from the variations of our materials of Chaetodon semeion.

Scales 35 laterally, 6 above, 13 below. D. XIV, 22; A. III, 20.

D. II, 10 — 135, second simple ray at least ½ in head; A. 120, greatly lower than second dorsal; pseudocaudal small or rudimentary; pectoral rays I, 24, uppermost ending in short filament, first 1 2/5 in head; ventral rays I, 8, first and second rays ending in long filaments of which second longer or 3 2/3 in total fish.

Brown, though head and belly not darker. Iris gray. Inside mouth whitish. Inside gill opening pale brown. Fins more or less dark to dusky brown.

Lesser Antilles. The example U. S. N. M. ~~[illegible]~~ from Martinique, No. 47627, referred to this species by Goode and Bean, is Bathygadus longifilis.

peduncle. Length 100 mm.

East Indies, Formosa, Queensland and Polynesia.

U. S. N. M., No. 44690. Lat. 28°38'
30' N., long. 87°02' W., Gulf of
Mexico, in 420 fathoms. March 13, 1885.
Albatross Collection (D. 2394).
Length 580 mm.

10441. Varadero Bay, Mindoro Island. July 23, 1908. Length 145 mm.

A 1036. Buka Island, Celebes. November 20, 1909. Length 202 mm.

A 958 and A 959. Vadaa Island, Celebes. November 17, 1909. Length 172 to 176 mm.

A 1064 and A 1065. Gidore Island, south of Ternate. November 24, 1909. Length 202 to 208 mm.

52449 U. S. N. M. Apia, Samoa. Bureau of Fisheries 1902. Length 160 mm.

Bathygadus bowersi (Gilbert)

Gadomus bowersi Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 659, fig. 257, 1903 (1905) (type locality: vicinity of Bird Island, 313 to 806 fathoms; vicinity of Kauai, 437 to 876 fathoms). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 394, 1906 (reference).

Bathygadus bowersi Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 379, 1920 (diagnosis in key). — Fowler, Mem. ~~Bishop Mus.~~ Bishop Mus., vol. 10, p. 85, 1928 (type).

Depth 6 1/3 to 6 2/5; head 5 1/4 to 5 1/2, width 1 1/2 to 1 7/8. Snout 3 to 3 1/10 in head from snout tip; eye 4 1/2 to 5 1/8, 1 2/5 to 1 3/5 in snout, 1 3/4 to 2 in interorbital; maxillary well inclined, reaches hind eye edge, length 1 3/5 to 1 7/8 in head from snout tip; mandible slightly

no barbel;
protruded; teeth rather coarsely villiform above, in rather wide bands of 7 or 8 irregular wide set series, lower smaller and in 3 or 4 close set or contracted irregular series; interorbital 2 1/3 to 2 4/5, broad, low, unevenly convex. Gill rakers 6 or 7 + 22 & 24, lanceolate, little longer than gill filaments or 1/2 of eye, on first arch.

Scales (pocket) 120?, of which 18 forward of vent; 5 above, 15 below, 28 predorsal. Scales on head like those on body. Scales simple, without striae; circuli rather fine, complete.

D. II, 8 or II, 9, III, fins continuous, rays all damaged; A. 104?, begins little before end

stripes descend obliquely forwards towards head and belly. Caudal and paired fins colorless in spirits.

(Günther.)

Ahl gives its dimensions as 100 mm.

The imperfectly described Chaetodon luctuosus may be the present species.

Quoy and Gaimard, Voy. Uranie, Zool., January 29 – May 26, 1825, p. 382. No locality. — Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. 278 (no locality). — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 33 (copied).

Snout short. D. XIV, 17; A. III, 16. Body with longitudinal streaks. Length 7.26 to 152 mm.

(Cuvier.)

We have been unable to locate the original publication of the description of the present species. The above reference is simply quoted from Valenciennes, as evidently the case with Günther and Ahl.

of depressed pectoral; no caudal; pectoral rays $\frac{I}{=}, 17$ to $\frac{I}{=}, 19$; fin $15/6$ in head; ventral rays $\frac{I}{=}, 8$, fin (damaged) origin opposite first dorsal origin.

Dusky or dark brown. Iris pale. Inside mouth and gill opening blackish. Paired fins and belly dusky, latter more or less swarthy.

Hawaiian Islands. According to Gilbert this species differs from Bathygadus cottoides, from the Kermadecs and New Zealand, in the presence of a short slit behind the last gill arch, number of dorsal and pectoral rays, gill rakers and proportions of head. In smaller preserved examples the head and belly are

Chaetodon blackburni Desjardins.

Chaetodon blackburni Desjardins, "Compt. Rend. Vor. Hist. Nat. Isle de France." — Valenciennes, Règne Animal Poiss. Ill., 1831. plate 39, fig. 3 (note). — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 32 (Mauritius). — Ahl, Arch. Naturg., band 89, abth. A, heft 5, 1923, p. 53 (Mauritius).

Snout slightly produced, longer than eye. Preopercle indistinctly denticulated. Scales 43, above 7, below 18. D. XVI, 22, front spines rather low and third equals snout; A. III, 16; soft dorsal and anal with obtuse angle. Front part of body light colored, with brownish black ocular band, narrower than eye. Soft dorsal and anal and tail between brownish black, color deeper posteriorly. Six narrow dark

much darker and in contrast with the rest of the pale trunk and long tail.

U. S. N. M., No. ~~[illegible]~~ 51658. Center of Bird Island, S. 32°, W. 12.8'. In 313 to 871 fathoms. August 5, 1902. Albatross Collection (D. 4151). Length 465 mm. Type of Gadomus bowersi.

U. S. N. M., No. 51695. Albatross Collection. Length 185 to 383 mm. Paratypes of Gadomus bowersi.

Chaetodon xanthocephalus Bennett.

Chaetodon xanthocephalus Bennett, Proc. Comm. Zool. Soc. Lndn, vol. 2, 1832, p. 182. Ceylon. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 33 (type). — Playfair, Fishes of Zanzibar, 1865, p. 36 (Zanzibar). — Day, Fishes of India, pt 1, 1875, p. 104, plate 26, fig. 4 (type). — Day, Faun. British India, vol. 2, 1889, p. 3. — Ahl, Arch. Naturgesch., band 89, abth. A, heft 5, 1923, p. 68 (Mikindani, East Africa).

Depth $1\frac{3}{4}$; head $4\frac{1}{3}$; eye 4 in head; $1\frac{1}{2}$ in snout, $1\frac{1}{2}$ in interorbital. Preopercle indistinctly serrated. Scales 44 to 46 in lateral line, 11 above, 18 below. D. XIII or XIV, 25 to 27; A. III, 24; 20 to 22 dorsal and anal rounded. No ocular band, small dark blotch above orbit. Brownish, with 6 indistinct dark vertical

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Bathygadus colletti (Jordan and Gilbert)

Gadomus colletti Jordan and Gilbert, Bull. U. S. Fish Comm., vol. 22, p. 603, fig., 1902 (Aug. 1904) (type locality: Suruga Bay, Japan, 207 to 250 fathoms). — Jordan, Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, p. 409 (fig. 378 copied) 1913 (compiled).

— Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. (142) 154, 1917 (Suruga Gulf, 211 to 293 fathoms); Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 392, 1920 (diagnosis in key).

Depth 7 1/4; head 5 2/5, width 1 7/8. Snout 3 3/4 in head from snout tip; eye 4, 1 1/5 in snout, little greater than interorbital; maxillary reaches 3/4 in eye, length 2 in head; long slender mental barbel 1 7/8; teeth very minute, villiform, numerous, close set, compact, upper bands more than twice width of lower;

interorbital 5 1/3, low, nearly level. Gill rakers 5+21, lanceolate, slender, 2 1/5 in eye; gill filaments 7/8 of gill rakers.

Scales 150 in median lateral or axial series, -of which 27 forward of vent; 10 above, 12 below, 36 predorsal. Scales caducous, mostly fallen, on head equally large as on body. Scales simple, cycloid, without striae; circuli fine, form angles at median horizontal axis basally.

D. II, 10— 120, second simple ray long and filamentous, 4 1/8 in total length of fish, also posteriorly fin rays much higher than other dorsal rays; A. II 2, greatly lower than second dorsal; small Pseudoanal, 1 4/5? in eye; pectoral rays I, 20, length 3 1/4 in total length of fish, uppermost ray extended in long filament; ventral rays I, 8, origin below pectoral origin or both before first dorsal origin, first ray ends

in filament (broken) though fin at least 5 in total length of fish.

Back light brown, belly and under surfaces paler to whitish with silvery white sheen. Iris light gray. Inside mouth and gill opening blackish. First dorsal dusky to blackish brown. Second dorsal grayish, gray blue posteriorly and broad margin blackish. Anal whitish anteriorly, dusky posteriorly. Paired fins dusky.

Japan. Conspicuous by its long fin filaments, contrasted fins, pale body color and compact

50802 U.S.N.M. Totomi Bay. 3 examples.
Length 87 to 127 mm.
74111 U.S.N.M. Misaki, Sagami. 3 examples.
Length 119 to 138 mm.

dentition. The lateral line slopes gently down below middle in the body depth above vent.

U. S. N. M., No. 50930. Off Gawa, N. 49° W. 2.8 m., off Honshu Island, Japan. In 207 to 250 fathoms. May 12, 1900. Albatross Collection (D. 3721). Length 332 mm. Type of Gadomus colletti.

Chaetodon ocellifer Tr. Franz.

Chaetodon ocellifer Tr. Franz, Abhandl. Bayer. Akad. Wiss., band 4, suppl. band 1, 1910, p. 49, plate 5, fig. 35. Nagasaki.
Heterochromis larvatus Franz, l.c., p. 52, plate 5, fig. 43.

Chaetodon decipiens Hibl, Arch. Naturgesch., band 89, abth. A, heft 3, 1923, p. 79 (on Chaetodon nippon Jordan and Fowler, non Heniochus nippon Steindachner and Döderlein).

D. XIII, 19 to 21; A. III, 16 or 17; scales 35 or 40. Body nearly uniform brown.

We have united the nominal Chaetodon decipiens with this species as it shows no structural differences. The broad dark band from the middle of the spinous dorsal extending down and occupies most of the anal is apparently a variable character.

Bathygadus cottoides Günther

Bathygadus cottoides Günther, Ann. Mag. Nat. Hist., ser. 5, vol. 2, p. 23, 1878 (type locality; deep sea between New Zealand and Kermadec Island, 520 to 700 fathoms); Rep. Voy. Challenger, vol. 22, p. 154, pl. 42, fig. a (types). — Goode and Bean, Oceanic Ichth., p. 420, 1895 (copied). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 394, 1899 (reference).

— Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 392, 1906 (reference).
— Waite, Rec. Canterbury Mus., vol. 1, no. 1, p. 18, April 25, 1907 (reference).

— Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (name); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 380, 1920 (diagnosis in key).

Bathygadus denticulatus (Gilbert and Hubbs)

(Gadomus denticulatus Gilbert and Hubbs, Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 393, fig. 3, 1920 (type locality: east coast of Mindoro; west of Bohol; Leyte; between Cebu and Leyte; east coast of Luzon; north of Mindanao; east British North Borneo; between Gillolo and Makyan; 108 to 415 fathoms).

Bathygadus (Gadomus) denticulatus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 21, 1929 (Weber's material).

Bathygadus longifilis (not Goode and Bean) Weber, Siboga Exped., vol. 57, p. 173, 1913 (Savu Sea; Flores Sea; 694 to 959 meters).

Depth 6 1/5; head 5 1/6, width 2 1/3. Snout 3 4/5 in head; eye 4 1/2, 1 1/6 in snout, greatly exceeds interorbital; maxillary reaches opposite hind eye edge, length 1 5/6 in head; mandibular barbel slender, length 1 2/5; teeth very minute, crowded, compact, form broader band in upper jaw; interorbital 6, low, level. Gill rakers 4 or 5 + 19 to 21, lanceolate on first arch, subequal with gill filaments, 1/2 of eye.

Scales 122 in medial lateral or axial series, of which 22 forward of vent; 7 to 9 above, 8 below, 37 predorsal. All scales very caducous or fallen, on head large as on body. Scales simple, cycloid, without striae; circuli

Chaetodon nippon Steindachner and Döderlein.

Chaetodon nippon (Döderlein) Steindachner and Döderlein, Denkschr. Akad. Wiss. Wien, band 48, abth 1, 1884, p. 23, plate 4, fig. 2. Tokio. — Jordan and Fowler, Proc. U. S. Nat. Mus., vol. 25, 1903, p. 537 (Totomi Bay, Misaki, Tokio market). — Ahl, Arch. Naturgesch., band 89, abth. A, heft 5, 1923, p. 78 (type).

Chaetodon carens Veale, Philippine Journ. Sci., vol. 5, no. 2, July 1910, p. 115, plate 1, fig. 1. Bantayan Island, Philippines.

moderately fine, complete.

D. II, 10 — 103, second simple ray ending in long slender filament which 4 in total fish; A. 93, fins much lower than dorsal; small slender pseudocaudal 3/4 of eye; pectoral rays I, 17 to I, 21, upper ray long filament 2 in total fish; ventral rays I, 7, first ray filament 4 in total fish.

Brown, more or less uniform, with slightly silvery to gray reflections. Iris light gray. Inside mouth and gill opening black. Fins all dark brown to dusky or blackish brown, filaments pale.

East Indies, Philippines.

Chaetodon daedalma Jordan and Fowler.

Chaetodon daedalma Jordan and Fowler,
Proc. U. S. Nat. Mus., vol. 25, 1903, p. 538, fig. 4.
Nafa, Okinawa.

Readily known by its entirely reticulate pattern, the edge of each scale deep brown to dusky and the center yellowish.

51390 U.S.N.M. Nafa, Okinawa, Riukiu.
Prof. J. O. Snyder. Length 143 mm.

U. S. N. M., No. 78207. Macabalan Point Light (Mindanao), S. 31° E., 7.7 miles (lat. 8° 37' 15" N., long. 124° 36' E.), vicinity of northern Mindanao. In 220 fathoms. August 5, 1909. Albatross Collection (D. 5505). Length 307 mm. Type of Gadomus denticulatus.

Chaetodon Lowensis Waite.

Chaetodon Lowensis Waite, Records Australian. Mus., vol. 5, 1903, p. 33, fig. 2.
Lord Howe Island.

D. XII, 25; A. III, 18. Scales 48. White, with 5 broad black bands, all wider than interspaces, first ocular, second from front of spinous dorsal, third widest and from middle of spinous dorsal, fourth at front of soft dorsal to anal and fifth at caudal base. Fin spines yellow. Length 15-7 mm. (Waite.)

Bathygadus dispar (Vaillant)

Hymenocephalus dispar Vaillant, Typéd. Sci. Travailleur et Talisman, Poiss., p. 221, pl. 24, fig. 1, 1888 (type locality: off Morocco, 1105 meters).

Bathygadus dispar Goode and Bean, Oceanic Ichth., p. 423, 1895 (copied). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 395, 1899 (reference). —

Brauer, Deutsch. Tiefsee Typed. Valdivia, vol. 15, p. 392, 1906 (reference).

Gadomus dispar Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference); Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 392, 1920 (diagnosis in key).

Bathygadus entomelas Gilbert and Ttubbs

Bathygadus entomelas Gilbert and Ttubbs, Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 386, fig. 2, 1920 (type locality: Molucca Passage, 435 fathoms).

Bathygadus (Bathygadus) entomelas Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 18, 1929 (compiled).

Depth 6 1/2; head 4 1/8, width 2. Snout 3 1/2 in head; eye 5 1/8, 1 2/5 in snout, 1 2/5 in interorbital; maxillary reaches little beyond eye, length 1 3/4 in head; teeth small, uniform, in 6 irregular series transversely above and 4 below; interorbital 3 1/4, low, unevenly convex. Gill rakers 5+20 or 21, lanceolate on first arch, 1 3/5 in eye; gill filaments 2/5 of gill rakers.

Scales 80 in medial or axial lateral series, of which 25 forward of vent; 6 above, 13 below, 30? predorsal.

Scales all very caducous, most all fallen and similar in size on head and body. Scales simple, thin, cycloid, without striae; circuli very fine, complete.

D. II, 8 — 73 (fin rays mostly damaged terminally), second simple ray 2 9/10 in head; A. 60 (rays damaged); small pseudocaudal at least half long as eye; pectoral rays I, 16 or I, 17, fin 1 3/5 in head; ventral rays I, 9, fin 2 in head and first ray filamentous.

Brown, nearly uniform. Iris gray. Inside mouth and gill opening blackish. Belly neutral blackish. Fins brownish.

East Indies. Known only from the type.

whitish. Length 10 mm. (ahl.)

E. V. R. Sc., No. 78211. March Island (S.) S. 78° E., 7 miles (lat. 0° 35' N., long. 127° 14' 40" E.), Molucca Passage. In 435 fathoms. November 28, 1909. Albatross Collection (D. 5619). Length 220 mm. Type.

Chaetodon leucopygus Ahl.

Chaetodon leucopygus Ahl, Arch. Naturgesch., band 89, abth. A, heft 5, 1923, p. 72, plate 2, fig. 12. Daressalam.

Snout 1¼ to 1⅓ in eye, which 3 in head. Scales 31 in lateral line, 5 above, 13 below. D. XII, 22 or 23; A. III, 18; soft dorsal and anal each forming right angle; caudal truncate. Whitish. Broad dark ocular bar. dull band extends from above caudal peduncle down toward anal front basally. Narrow dark lines within scale rows along body below. Vertical fins yellowish white, edges white and with submarginal dark line; dorsal from seventeenth ray dark brown. Caudal posteriorly with milk white crescentic edge, before it clear brown and still anterior milk-white band. Paired fins

Bathygadus favosus Goode and Bean

Bathygadus favosus Goode and Bean, Bull. Mus. Comp. Zool., vol. 12, p. 160, 1883 (type locality: off Martinique; lat. 15° N., long. 63° W., 172 fathoms); Oceanic Ichth., p. 420, pl. , fig. 352, 1895 (type; lat. 15° to 28° N., long. 63° to 87° W., 420 to 1501 fathoms).—

Jordan and Evermann, Bull. U. S. Nat. Mus., No. 47, pt. 3, p. 2565, 1898 (copied).—Garman, Mem. Mus. Comp. Zool., vol. 24, p. 395, 1899 (reference).—

Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 392, 1906 (reference).—Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference); Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 380, 1920 (diagnosis in key).

Depth 6 1/2 to 7 3/5; head 5 1/4 to 5 7/8, width 2. Snout 3 1/4 to 3 2/3 in head from snout tip; eye 4 3/5 to 5 1/4, 1 1/3 to 1 3/5 in snout, 1 2/3 to 1 7/8 in interorbital; maxillary reaches 3/4 or to hind eye edge, length 1 3/4 to 1 7/8 in head from snout tip; teeth in close set villiform bands, of which 10 irregular rows transversely above and 5 below; interorbital 3 1/10 to 3 2/5 in head, low, unevenly convex. Gill rakers 6 + 21, lanceolate, 1/2 of eye; gill filaments 3/4 of gill rakers.

Scales 143? in axial lateral series, of which 20 forward of vent; 4 or 5 above, 14 below. Scales very caducous, most all fallen. On head scales apparently small

Chaetodon fremblii Bennett.

Chaetodon fremblii Bennett, Zool. Journ., vol. 4, 1828, p. 42. Hawaiian Islands. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 16 (type). — Günther, Journ. Mus. Godeffroy, band 2 – 3, heft 5 – 6, 1874, p. 39, plate 29, fig. B (Hawaii). — Fowler, Bishop Mus. Bull., no. 22, 1925, p. 26 (Honolulu). — Fowler and Ball, Bishop Mus. Bull., no. 26, 1925 (1926), p. 17 (French Frigate Shoals; Laysan).
Chaetodon frembli bennetti Kaup, Arch. Naturg., band 26, abth 1, 1860, p. 16 (Hawaii).

Yellow, with 9 blue longitudinal lines. No ocular band, but black predorsal blotch and black band from last dorsal rays across tail, but not on anal.

51113, 55094, 58534 U.S.N.M. Hawaii. Bureau of Fisheries. 4 examples.
58537 U.S.N.M. Laysan Island. Max Schlemmer.

on muzzle, otherwise on head large as on body. Scales without striae, thin, simple; circuli well marked, complete, moderately small.

D. II, 9, 120? to 124 (ends of all rays damaged); A. 102 to 105 (ends of all rays damaged), origin opposite first dorsal origin; no pseudocaudal; pectoral rays I, 14, length 1 4/5 to 2 1/5 in total head length; ventral rays I, 8, length 2 1/2 in total head length.

dark brown, though some preserved examples apparently bleached whitish. Usually head and belly swarthy to blackish. Iris gray to whitish. Inside mouth and gill opening blackish, also branchiostegal flaps. Fins brownish, paired ones often dark.

Chaetodon nigripinnatus Desjardins.

Chaetodon nigripinnatus Desjardins, Dix. Rap. Soc. hist. nat. Maurice, 1836, p. 57. Mauritius.

Chaetodon nigripinnis Peters, Arch. Naturges., band 21, 1855, p. 246. Mozambique. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 32 (copied).

Chaetodon (Tetragonoptrus) nigripinnis Savage, Hist. Nat. Madagascar, Poiss., 1891, p. 260, plate 29, fig. 4 (type).

Chaetodon xanthocephalus (non Bennett) Ahl, Arch. Naturges., band 89, abth. A, heft 5, 1923, p. 68 (type of Chaetodon nigripinnis).

This nominal form according to Savage is not clearly distinct from Chaetodon xanthocephalus Bennett, with its developed fins, blackish marginally, bordered red at base and 5 transverse brown lines on body.

West Indies, Although the fins are damaged in my materials none seem to show the ventrals longer than pectorals, as in Goode and Bean's figure. This last also shows very regular squamation on the body, though the scale pockets would indicate the scale rows as quite irregular.

U. S. N. M., No. 34909.

Length 372 mm. to end of broken tail.

U. S. N. M., No. 34910. Lat. 15°24'N., Long. 63°31'W.

Albatross Collection (D. 50). Length 445 mm.

streaks. Dorsal and anal dark violet, edges white. Caudal and ventral yellowish. (Day.)

East Africa, Zanzibar; India, Ceylon.

We have examined a single example. 43938 U.S.N.M. Mauritius. Colonel Nicholas Pike. Length 203 mm.

U. S. N. M., No. 34911.

Length 530 mm.

U. S. N. M., No. 34918. Lat. 15° N., long. 63°

Length 328 mm.

U. S. N. M., No. 44620. Lat. 28°47'30" N., long. 87°27'; Gulf of Mexico. In 724 fathoms. March 13, 1885. Albatross Collection (D. 2392). Length 421 mm.

U. S. N. M., No. 47630.

Martinique.

Blake Collection (D. LXXXII). Length 160 mm. Very poorly preserved.

Vertical fins yellow, with gray submarginal line on top of fish. Caudal yellow, with broad gray edge. Pectoral white. Ventral yellow. Length 191 mm.

(Playfair.)

U. S. N. M., No. 74342. Lat. 28°38'30" N., long. 87°2' W., Gulf of Mexico. In 420 fathoms. March 13, 1885. Albatross Collection (D. 2394).

Length 208 to 210 mm. 2 examples.

Chaetodon leucopleura Playfair.

Chaetodon leucopleura Playfair, Fishes of Zanzibar, 1866, p. 35, plate 6, fig. 3.

Zanzibar.

Depth 1½; head 3⅕.

Snout 3 in head from snout tip; eye 3½, 1⅕ in snout; maxillary 4 in head. Preopercle entire. Scales 27 in lateral line, 5 above, 13 below. D. XII, 23 or 24; A. III, 26; soft dorsal and anal obtusely angular behind; caudal slightly emarginate. Dark ocular band little narrower than orbit, extends from dorsal origin down to chest. Muzzle blackish with several yellowish lines across interorbital and 2 yellow circular marks on neck. Hind opercle edge yellow. Back and belly brown, shaded to white or yellowish at middle of sides. On belly 5 or 6 longitudinal yellow stripes, highest back from pectoral axil.

Bathygadus filamentosus (Smith and Radcliffe)

Regania filamentosa Smith and Radcliffe, Proc. U. S. Nat. Mus., vol. 43, p. 107, pl. 22, fig. 2, 1913 (type locality: Sipadan Island, western Borneo, 415 fathoms). — Weber, Siboga Exped., vol. 57, p. 672, 1913 (note).

Bathygadus filamentosus Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. (380) 384, 1920 (type; Molucca Passage; Gulf of Boni).

Bathygadus (Bathygadus) filamentosus Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 16, 1929 (~~Bathygadus dubiosus~~ Weber's material).

Bathygadus dubiosus Weber, Siboga Exped., vol. 57, p. 173, pl. 5, fig. 3b, 1913 (type locality: lat. 3° 37.1' S., long. 131° 26.4' E., Arafura Sea, 924 meters).

Bathygadus furvescens Alcock

Bathygadus furvescens Alcock, Journ. Asiatic Soc. Bengal, vol. 63, pt. 2, p. 128, 1894 (type locality: off Maldives, 719 fathoms); Illustrat. Zool. Investigator, pt. 3, pl. 16, fig. 1, 1895; Cat. Deep Sea Fishes Indian Mus., p. 121, 1899 (Arabian Sea; Gulf of Manár; Bengal Bay; Andaman Sea; 142 to 719 fathoms).

—Garman, Mem. Mus. Comp. Zool., vol. 24, p. 395, 1899 (reference). —Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. (380) 389, 1920 (Eastern Luzon; between Leyte and Mindanao; off northern Mindanao; between Siquijor and Bohol; Gulf of Tomini; 565 to 976 fathoms).

Bathygadus (Bathygadus) furvescens Weber and Beaufort, Fishes Indo Austral. Archip.,

vol. 5, p. 19, 1929 (Weber's materials).

Bathygadus melanobranchus (not Vaillant) Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 272, 1906 (north west coast of Sumatra, 1024 meters; coast of east Africa, 1289 meters).

Bathygadus (Gadomus) melanobranchus Weber, Siboga Exped., vol. 57, p. 112, 1913 (Macassar Strait; Ceram Sea; Flores Sea; 567 to 1301 meters).

Bathygadus garretti Gilbert and Hubbs

Bathygadus garretti Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. (142) 151, pl. 8, fig. 1, 1916 (type locality: Suruga Gulf, 197 to 297 fathoms); Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 380, 1920 (diagnosis in key).

Depth 6 2/3; head 4 4/5, width 1 7/8. Snout 3 1/2 in head; eye 6, 1 3/4 in snout, 1 1/2 in interorbital; maxillary reaches little beyond eye, length 1 7/8 in head; mandibular barbel very small, 7 in eye; teeth in villiform bands, upper broader or with 8 irregular transverse rows, 4 or 5 irregular rows below; interorbital 4 in head, low, broad, little convex. Gill rakers 4 + 19, lanceolate on first arch, 1 1/3 in eye; gill filaments 3/5 of gill rakers.

Scales 167 in median or axial lateral series, of which 30 forward

of ventral; 7 above, 17 below, 38 predorsal. Scales caducous, most all fallen, equally large on head as on body. Scales cycloid, without striae; circuli moderate, each forms angle at median or horizontal axis basally.

D. II, 9, 116, second simple ray 2 4/5 in head; A. 104; pseudocaudal minute, apparently less than barbel; pectoral rays I, 16, length 1 1/2 in head; ventral rays I, 9, fin 2 1/10 in head, inserted well before pectoral origin which also slightly before first dorsal origin.

Gray or drab brown, head, breast and belly livid though not darker. Inside mouth and gill openings blackish. Iris gray. Fins dull dusky, dorsal and

pectoral bases; third from front of soft dorsal toward front of soft anal; fourth across caudal peduncle anteriorly; fifth at caudal base. Terminal half of second membrane of spinous dorsal black. Large black ocellus with narrow white edge, on soft dorsal front. Ventral whitish, outer edges dusky. Length 60 mm.

South Africa. Originally described by Regan from an example 140 mm. lng. The above description from an example in the Academy of Natural Sciences of Philadelphia from Natal.

anal paler anteriorly.

Japan. The scale pockets, from which most of the scales have fallen, would indicate that the scales are less regularly arranged than shown in the original figure of the species.

U. S. N. M., No. 76863.

Albatross Collection (D. 5059). Length 513 mm. Type.

Chaetodon marleyi Regan.

Chaetodon marleyi Regan, Ann. Durban Mus., vol. 3, pt. 1, 1921, p. 1. East London, South Africa, 40 fathoms. — Fowler, Proc. Acad. Nat. Sci. Phila., 1925, p. 251 (Natal).

depth 1½; head 2 4/5, width 2 1/10. Snout 3 1/8 in head; eye 2 7/8; maxillary 3 1/2, reaches opposite hind nostril; interorbital 3 1/4. Gill rakers 5 + 10. Tubes 37 in lateral line; scales 43 in median lateral series to caudal base, 6 above lateral line, 22 below. D. X, 24, I; A. III, 18, I; caudal 1 1/2 in head, truncate; pectoral 1 1/4 in head; ventral 1 3/4. Dusky brown streak from occiput to snout tip. Ocular dark band from spinous dorsal origin to eye and over cheek. Second dark band from third to fifth dorsal spines to ventral and

Bathygadus introniger (Gilbert and Hubbs) (Gadomus introniger Gilbert and Hubbs, Bull. U. S. Nat. Mus., No. 100, vol. 1, p. (393) 401, fig. 5, 1920 (type locality: off southern Luzon; Lagonoy Gulf; east coast British North Borneo; Buton Strait; Gulf of Boni; 300 to 700 fathoms).

Bathygadus (Gadomus) introniger Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 21, 1929 (compiled).

Gadomus multifilis (part) Radcliffe, Proc. U. S. Nat. Mus., vol. 43, p. 106, text fig. 1, 1912. — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference).

Depth 6 4/5; head 4 3/5, width 2 1/4. Snout to eye 3 2/3 in head from snout tip; eye 5 7/8, 1 4/5 in snout, 1 2/5 in interorbital; orbit 4 7/8 in head from snout tip, 1 1/5 in snout, 1 in interorbital; maxillary reaches well behind orbit, length from snout tip 1 3/4 in head; mandibular barbel 5 1/2; teeth minute, villiform, in bands in jaws of 10 to 12 irregular transverse series; interorbital 4 1/2 in head from snout tip, low nearly level or little cavernous. Gill rakers 6 + 23 or 24 on first arch, lanceolate, 1/2 of eye; gill filaments 2/3 of gill rakers.

Scales (pockets) 100 in lateral line; 7 above, 14 below, 30 predorsal. Scales cycloid; circuli very fine,

Chaetodon tricinctus Waite.

Chaetodon tricinctus Waite, Records Austral. Mus., vol. 4, 1901, p. 45, fig. 12. Lord Howe Island. — Waite, l.c., vol. 5, 1903, p. 32. (Lord Howe Island).

D. XII, 20; A. III, 17; scales 40. Yellowish, with 3 broad black vertical bands, first ocular, second from middle of spinous dorsal to belly and third from front of soft dorsal to anal. Length 97 to 185 mm.

(Waite.)

more or less complete.

D. II, 8 — 87, second simple ray elongate, filamentous, length 2 2/5 in combined head and body, fin height of second dorsal 2 1/4? in total head length; A. 72, much lower than second dorsal; pseudocaudal 4 in head; pectoral rays I, 17, fin with uppermost ray long filament 2 1/3 in combined head and body to pseudocaudal; ventral I, 7, first simple ray ending in filament 4 1/8.

Brown. Inside mouth gray. Inside gill opening blackish brown, also branchiostegal region. Iris gray. Fins dusky.

East Indies, Philippines.

Sofo dorsal and anal with black submarginal line next to white border. Caudal with crescentic band and clear border. Pectoral yellow. Length 135 mm.

(Ahl.)

U. S. N. M., No. 78209. North Island (S.), N. 87° E., 10.2 miles (lat. 5° 35' S., long. 122° 20' E., Buton Strait.) Dn 559 fathoms, December 16, 1909. Length 322 mm. Type of Gadomus introniger.

Chaetodon notophthalmus Bikl.

Chaetodon notophthalmus Bikl, Arch. Naturges.,
band 89, abth. A, heft 5, 1923, p. 81, plate 2, fig. 10.
Locality?

Snout equals eye. Preopercle rounded. Scales 47
in lateral line, 8 above, 22 below. D. XI, 25; A. III,
19; dorsal and anal rounded posteriorly.
Golden yellow. Brown ocular bar to obsolete
blotch on chest. Wide obsolete band from third
to fifth dorsal spines behind gill openings till
above pectoral origin to ventral and behind.
Breast, from dark band to gill cover, clear
yellow. Another ~~lighter~~ dusk band from last
dorsal spines to middle of anal. Obsolete
band on caudal peduncle. Deep black
longitudinal blotch on last spines and first
dorsal rays. Between broad body bands on
lower half of body each scale with silver
white spot - at 8 to 10 longitudinal rows.

Bathygadus longifilis Goode and Bean

Bathygadus longifilis Goode and Bean, Proc. U. S. Nat. Mus., vol. 8, p. 599, 1885 (1886) (type locality: lat. 28°47' 30" N., long. 87°27', Gulf of Mexico, 724 fathoms). — Günther, Rep. Voy. Challenger, vol. 22, p. 157, 1887 (compiled). — Goode and Bean, Oceanic Ichth., p. 422, 1895 (types; Gulf of Mexico; 525 to 739 fathoms). — Collett, Res. Camp. Sci. Monaco, vol. 10, p. 90, 1896 (between Pico and São Jorge, Azores, 1287 meters). — Jordan and Evermann, Bull. U. S. Nat. Mus., No. 47, vol. 3, p. 2566, 1898 (copied). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 394, 1899 (reference). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 392, 1906 (reference). — Murray and Hjort, Depths of the Ocean, p. 399, 1912 (Off

Morocco, 1215 to 1615 meters; Canaries, 1365, meters). — Roule, Rés. Camp. Sci. Monaco, vol. 52, p. 88, 1919 (south of Pico, Azores; south east of Flores; south of Portugal; 50 miles off Mogador; 1½ miles off Hierro, Canaries; north of São Jorge 3½ miles; 1095 to 1786 meters). —

Hymenocephalus longifilis Vaillant, Exped. Sci. Travailleur et Talisman, Poiss., p. 218, pl. 23, fig. 1a–c, 1888 (coasts of Morocco; coasts of Soudan; 1084 to 1635 meters).

Gadomus longifilis Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference); Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 393, 1920 (diagnosis in key).

Bathygadus arcuatus (part) Goode and Bean, Oceanic Ichthyology, p. 421, 1895 (specimen from off Martinique, 476 fathoms).

Depth 7 1/2 to 7 7/8; head 5 2/3 to 5 3/4, width 2 1/8 to 2 1/3. Snout 3 1/3 to 3 2/3 in head from snout tip; eye 4 1/2 to 5, 1 1/5 to 1 2/5 in snout, 1 to 1 1/6 in interorbital; maxillary reaches opposite hind eye edge, length 1 2/3 to 1 3/4 in head from snout tip; mandibular barbel 2 1/2 to 2 2/3, slender; teeth minutely villiform, in rather narrow bands in jaws with lower band narrower; interorbital 3 1/4 to 4, low, slightly convex. Gill rakers 6 or 7 + 25 to 28, on first arch, lanceolate, slender, 1/3 in eye; gill filaments 1/5 of gill rakers.

Scales 123 to 142 in median or axial lateral series, of which 21 forward of vent; 6 above, 12? below, 25 predorsal. Scales apparently

Chaetodon flavirostris Günther.

Chaetodon flavirostris Günther, Journ. Linn. Godeffroy, Band 2-3, left 5-6, 1874. p. 41, plate 32, fig. d. Savaii, Friendly Islands. — Veale, Occas. Pap. Bishop Linn., vol. 4, no. 1, 1906. p. 64 (Futé, New Hebrides).

Suggestive of the design of Chaetodon adiergastos Veale but without dark lines on each row of scales longitudinally. Differs also in blackish vertical band from base of dorsal rays crossing tail to base of anal rays.

equally large on head as on body, all very caducous or fallen. Scales thin, cycloid, without striae; circuli moderate, converge to angles on median basis axis.

D. II, 8 or II, 9 — 132, second simple ray elongate and filamentous, 3 1/5 in total length of fish; A. 110, rays all much shorter than second dorsal; pseudocaudal (broken) long as eye; pectoral rays I, 12, uppermost long and filamentous, at least 2 4/5 in total length of fish; ventral rays I, 8, first long and filamentous or 3 in total length of fish.

Pale brown, nearly uniform. Iris grayish. Inside mouth and gill opening blackish. Belly grayish.

Chaetodon mitratus Günther.

Chaetodon mitratus Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 16. Mauritius.

Snout moderately produced. Preopercle entire. Scales 35 in lateral line, 6 above, 15 below. D. XIII, 19; A. III, 14; dorsal and anal rounded posteriorly. Ocular band crosses head above orbits and not extending to interopercle. Broad oblique brown band from nape toward but not quite to soft anal; second paralleling back to lower side of tail. Dorsal with fine brown submarginal line. Anal, caudal and ventral yellowish. Length 94 mm. (Günther).

Atlantic Ocean, Gulf of Mexico. My material quite agrees with Vaillant's figure, though it does not show any scales on the head. Vaillant gives scales 135 in lateral series, 7 above, 18 below.

U. S. N. M., No. 37338. Lat. 28° N., long. 87° W.

Albatross Collection. Type 233 mm, paratype 225 mm.

U. S. N. M., No. 42114.

Paris Museum (46 + 480). Length 262 mm. As Hymenocephalus longifilis.

U. S. N. M., No. 47411. Lat. 28°47'30" N., long. 87°27' W., Gulf of Mexico. In 724 fathoms. March 13, 1885. Albatross Collection (D. 2392). Length 243 mm.

Chaetodon modestus Schlegel.

Chaetodon modestus Schlegel, Faun. Japon. Poiss., dec. 5 and 6, 1844, p. 80, plate 4, fig. 2. Nagasaki. — Richardson, Ichth. China Jap., 1846, p. 46 (China, Japan). — Bleeker, Verh. Akad. Wet. Amsterdam, deel 1, no. 1, 1854, p. (2) 8 (Kaminoseki). — Kaup, Arch. Naturges., band 2, abth. 1, 1860, p. 153 (China, Japan). — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 10 (Japan, China). — Günther, Rep. Voy. Challenger, vol. 1, 1880, p. 63 (Yokohama). — Károli, Termesz. Füzetek, Budapest, vol. 5, 1881, p. 155 (Canton). — Elera, Cat. Faun. Filip., vol. 1, 1895, p. 485 (Luzon, Manila). — Jordan and Fowler, Proc. U. S. Nat. Mus., vol. 25, 1902, p. 535 (part). — Franz, Abhandl. K. Bayer. Akad. Wiss., band 4, suppl. band 1, 1910, p. 49 (Fukuura and Yokohama). — Veale, Philippine Journ. Sci., vol. 9, pt. 1, 1914, p. 72 —

1035

U. S. N. M., No. 47627.

Martinique.

In 476 fathoms.

Blake Collection (D. LXXXVIII). Length 217 mm. One example. As Bathygadus arcuatus. Gill rakers 6 + 27.

U. S. N. M., No. 53046. Lat. 28°51' N., long. 88°18' W., Gulf of Mexico. ~~In~~ 730 fathoms. March 3, 1885. Albatross Collection (D. 2385). Length 273 mm.

U. S. N. M., No. 74340. Lat. 29°11'30" N., long. 85°29' W., Gulf of Mexico. In 26 fathoms. February 7, 1885. Albatross Collection (D. 2374). Length 112 to 125 mm. As Bathygadus arcuatus. Gill rakers 6 or 7 + 25 to 28. 2 examples.

(Hong Kong). — Ahl, Arch. Naturges., band 89, abth. A., Hefte 3, 1923, p. 82 (Japan, Kobe, Yedo).

Coradion modestus Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 422 (Kagoshima).

Chaetodon ocellatus (non Bloch) Gray, Cat. Fish. Gronow, 1854, p. 68 (Indian Sea).

Chaetodon fallax Ahl, l.c., p. 64 (on Chaetodon modestus Jordan and Fowler).

D. $\frac{21}{XII,\ 25}$; A. $\frac{18}{III,\ 21}$; scales 45 or 46.

Brown. Blackish ocular band wide as eye. Black white edged ocellus at soft dorsal superiorly. Blackish bar at caudal base and brown bar across caudal peduncle.

1036

U. S. N. M., No. 74 343. Lat. 28°43' N., long. 87°14'30" W., Gulf of Mexico. In 525 fathoms. March 13, 1885. Albatross Collection (D. 2393). Length 95 mm. Filaments evidently broken off fins.

Chaetodon corallicola Snyder.

Chaetodon corallicola Snyder, Bull. U.S. Fish Comm., vol. 22, 1902 (1904), p. 53, plate 11, fig. 20. Oahu Island, in 27 to 29 fathoms. — Jordan and Evermann, l.c., vol. 23, pt. 1, 1903 (1905), p. 374, plate 46, fig. 1 (Lyker). — Fowler, Bishop Mus. Bull., no. 22, 1925, p. 28 (Honolulu)

Dark ocular band. Body more or less mottled with darker blotches. Caudal and pectoral pale. Ventral dusky terminally.

Station 4034

~~Type~~ 50880 U.S.N.M., Oahu, Hawaiian Islands. Albatross Collection. Type.

55317 U.S.N.M. Hawaii. Albatross Collection. Cotype.

Bathygadus melanobranchus Vaillant

Bathygadus melanobranchus Vaillant, Expéd. Sci. Travailleur et Talisman, Poiss., p. 206, pl. 18, fig. 1, 1888 (type locality: off Morocco; Canaries; Soudan; 834 to 1590 meters). — Goode and Bean, Oceanic Ichth., p. 424, 1895 (copied). — Collett, Rés. Camp. Sci. Monaco, vol. 10, p. 88, 1896 (lat. 39°26'30" N., long. 33°23' E., 1557 meters). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 395, 1899 (reference). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 392, 1906 (reference). — Murray and Hjort, Depths of the Ocean, p. 399, 1912 (off Morocco, 1215 meters; off Canaries, 1365 meters). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference). — Roule, Rés. Camp. Sci. Monaco, vol. 52, p. 89, 1919 (3 miles east of Lanzarote, Madeira;

near Maio, Cape Verde Islands; 6 miles south of São Miguel; north of São Jorge 3½ miles; between Pico and São Jorge; 1095 to 1300 meters).—

Gilbert and Hubbs, Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 380, 1920 (diagnosis in key).

Depth 6 2/3; head 5, width 2¼. Snout 3¾ in head from snout tip; eye 3½, subequal with snout and interorbital; maxillary reaches opposite hind eye edge, length 1 4/5 in head from snout tip; no barbel; teeth finely villiform, even, in 6 or 7 rows transversely above and 4 or 5 below; interorbital 3 1/10, low, unevenly though rather deeply depressed. Gill rakers 6 + 2 3 on first arch, lanceolate, slender, 1 2/5 in eye; gill filaments 2/7 of gill rakers.

Scales (pockets) 110 in medial lateral or axial series, of which

Morocco, 1215 to 1615 meters; Canaries, 1365 meters). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1917 (reference). — Roule, Rés. Camp. Sci. Monaco, vol. 52, p. 88, 1919 (south of Pico, Azores; south east of Flores; south of Portugal; 50 miles off Mogador; 1½ miles off Hierro, Canaries; north of São Jorge 3½ miles; 1095 to 1786 meters). — Gilbert and Hubbs, Bull. U. S. Nat. Mus., no. 100, vol. 1, pt. 7, p. 393, 1920 (diagnosis).

18 forward of vent; 7 above, 12 below, 26 predorsal. Scales most all fallen, apparently little larger on head than on body. Scales simple, cycloid, without striae; circuli fine, form angles on median or horizontal axis basally.

D. II, 8 — III, second simple ray 3 in total head length; A. 8 8, fin much lower than dorsal; no pseudocaudal; pectoral rays I, 15? (damaged); ventral rays I, 7. (damaged), inserted well before first dorsal.

Warm brown generally, head little paler, with silvered reflections and gray on opercles. Iris gray. Inside mouth and gill opening blackish brown. Fins more or less dusky.

Chaetodon trichrous Günther.

Chaetodon trichrous Günther, Journ. Mus. Godeffroy, band 2–3 (5–6), 1874, p. 40, plate 36, fig. a. Society Islands. — Jordan and Snyder, Proc. U. S. Nat. Mus., vol. 29, 1906, p. 355, fig. 2 (Tahiti).

Body whitish anteriorly, yellowish posteriorly. Black ocular band broader below eye across side of breast to front of ventrals. Large blackish blotch medially from bases of last dorsal spines and front rays down till above anal spines. Ventral black.

45096 U. S. N. M. Hawaii. H. G. Whitney.
Length 85 to 95 mm. 2 examples.

Eastern Atlantic. Though my specimens in poor preservation. Vaillant shows pectoral 1 3/5 in head and ventral 2 2/3. He also gives scales 140?, 7 above, 17 below, D. 9 — 102 and A. 97, length 440 mm.

U. S. N. M., No. 42083.

Paris Museum (86 + 110). ~~Collection~~ Travailleur et Talisman Collection.

→ Length 210 mm.

U. S. N. M., No. 42111.

Travailleur et Talisman Collection.

Paris Museum (86 + 113).

Length 118 mm to end of broken tail.

4579. Basa Island, Gulf of Boni, Celebes. December 7, 1909. Length 90 mm.

4802. Limbe Strait, Celebes. November 10, 1909. Length 89 mm.

4829. Kadaa Island, Celebes. November 17, 1909. Length 77 mm.

53366 U.S.N.M. Honolulu Albatross Collection. Length 95 mm.

84221 U.S.N.M. Cebu. Dr. F. Baker. Length 90 mm.

Bathygadus macrops Goode and Bean

Bathygadus macrops Goode and Bean, Proc. U. S. Nat. Mus., vol. 8, p. 598, 1885 (type locality: lat. 28°34' N., long. 86°84' W., 335 fathoms). —

Günther, Rep. Voy. Challenger, vol. 22, p. 156, 1887 (copied). — Goode and Bean, Oceanic Ichth., p. 423, 1895 (type; Gulf of Mexico, 321 to 347 fathoms). — Jordan and Evermann, Bull. U. S. Nat. Mus., No. 47, pt. 3, p. 2566, 1898 (copied). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 394, 1899 (reference). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 392, 1906 (reference). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference); Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 380, 1920 (diagnosis in key).

Depth 7 to 7 1/8; head 5 to 5 1/3, width 1 7/8 to 2. Snout 3 2/3 to 3 3/4 in head; eye 3 1/3 to 3 3/5, greater than snout or interorbital; maxillary reaches 4/5 in or to hind eye edge, length 1 4/5 to 1 7/8 in head; mandibular barbel absent or long as 5 in eye; teeth minute, in villiform bands in jaws - of 7 more or less defined close set rows above and 5 or 6 below; interorbital 3 1/2 to 5 in head, nearly level, though with irregular depressions. Gill rakers 6 or 7 + 19 or 20, lanceolate, 2 2/3 in eye; gill filaments 1/2 of gill rakers.

Scales 135 in axial or medial lateral series, of which 27 forward of vent; 6 above, 12 below, 40 predorsal. Scales very

from greenish by gray portion anteriorly. Front part of caudal peduncle orange dusky, posteriorly pale yellow with dusky, separated by narrow black line from orange in front and dusky hyaline of terminal portion of caudal fin. Pectoral dusky hyaline. Ventral dusky greenish white.

488. Tablayan, Mindoro. December 12, 1908. Length 90 mm.

585. Tablayan. December 13, 1908. Length 91 mm.

14407. Talisse Island. November 9, 1909. Length 80 mm.

19230. Tapiantana Island. September 13, 1909. Length 86 mm.

10436. Varadero Bay, Mindoro. July 23, 1908. Length 96 mm.

caducous, most all fallen, apparently equally as large on head as on body. Scales cycloid, without striae; circuli moderately fine, form angles at horizontal or medial axial basally.

D. $\underline{\underline{II}}$, 8 — 125, second simple ray 2 7/8 in head, though ends of most rays broken; A. $\underline{\underline{II}}$ 2, rays all much lower or shorter than dorsal rays; pseudocaudal small, short, 1/7 of eye; pectoral rays $\underline{\underline{I}}$, 16, fin 1 2/3 to 2 in head; ventral rays $\underline{\underline{I}}$, 7, fin 1 1/2 to 1 3/4 in head, origin before first dorsal origin.

Very light brown, with slightly silvered tints, belly and under surfaces of head nearly whitish. Iris silvery white.

bases of scales with black spot. Forehead dusky, running to point of snout. Black saddle on nape, after interruption continued as ocular bar narrower than eye with center bright cadmium yellow. Opercle tip with dusky blotch, anteriorly more yellowish. Lower head and breast more or less dusky. Scaled portion of dorsal dusky with yellowish shades, soft fin very narrowly edged dusky; tips of spines yellowish green, continued as submarginal band on soft dorsal, adjoining below narrow white line and then broader black line, disappearing on fifth spine and fading out on lower vertical edge of fin, last tipped with orange. Soft anal narrowly creamy white, spines and broad submarginal band on soft fin soiled greenish white with black submarginal line separated

Inside mouth and gill opening blackish though outer branchiostegal region whitish. Fins all largely pale to whitish, dorsal and anal posteriorly and caudal dusky to dark brown.

Gulf of Mexico. Known by its light or pale coloration and the head much larger than the trunk.

U. S. N. M., No. 37339. Lat. 28°34' N., long. 86°48' W., Gulf of Mexico. In 335 fathoms. March 13, 1885. Albatross Collection (D. 2396). Length 305 mm. Type.

U. S. N. M., No. 53047. Lat. 28°36'15" N., long. 86°50' W., Gulf of Mexico. In 347 fathoms. March 13, 1885. Albatross Collection (D. 2395). Length 197 to 238 mm. 2 examples.

627 and 628. Port Banalacan, Marinduque. February 23, 1909. Length 85 to 86 mm.

1189, 1190, 1233, 15111, 15112. Port Dupin, Leyte Island. March 17, 1909. Length 80 to 93 mm.

7978. Port Galera, Mindoro Island. October 27, 1909. Length 73 mm.

10308. Port Maricaban. July 21, 1908. Length 88 mm.

1186. Port Matalvi. November 23, 1908. Length 81 mm.

405. Port Palapag. June 3, 1909. Length 75 mm.

7802. Port San Pio Quinto, Camiguin Island. November 8, 1908. Length 96 mm.

1299. Port San Pio Quinto. November 11, 1908. Length 91 mm.

8274. Romblon. March 26, 1908. Length 52 mm. [467.] Sides barred with sulphur yellow and dusky purplish, purple shades very slight. Lower sides with pale yellow,

1045

U. S. N. M., 2 examples. Lat. 29° 3' 15" N., long. 88° 16' W., Gulf of Mexico. In 324 fathoms. February 11, 1885. Albatross Collection (D. 2376). Length 123 to 327 mm.

pale yellow margined by black bar, terminal $\frac{2}{3}$ of fin colorless. Caudal peduncle vermilion, extends also on basal $\frac{2}{3}$ of last anal rays. Pectoral colorless. Ventral rays dirty straw color.

5774 and 16148. Inahing, Camiguin Island. August 3, 1909. Length 64 to 86 mm.

3813. Maribojoc Bay, Bohol Island. March 26, 1909. Length 80 mm.

1074 and 1075. Masbate reef, Masbate. April 20, 1908. Length 90 mm.

611 and 21980. Murcielagos Bay. August 9, 1909. Length 77 to 89 mm. 3 examples.

4756 and 4757. North west of Verde Island. July 22, 1908. Length 90 to 95 mm.

735. 3903, 20568. Opol, Mindanao Island. April 4, 1906. Length 57 to 68 mm.

372 to 374. Paluan Bay, Mindoro Island. December 11, 1908. Length 83 to 90 mm.

Bathygadus magnifilis (Gilbert and Hubbs)
Gadomus magnifilis Gilbert and Hubbs, Bull. U. S. Nat. Mus., No. 100, vol. 1, p. (393) 398, fig. 4, 1920 (type locality: northern Mindanao; Togod Bay, southern Leyte; near Cagayan Island; 508 to 554 fathoms.

Depth 6 3/4 to 7; head 5 1/4 to 5 1/3, width 2 1/8 to 2 1/5. Snout to eye 3 3/4 in head from snout tip; eye 5 to 5 1/4, 1 1/5 to 1 1/2 in snout, 1 1/8 to 1 1/5 times interorbital; orbit 4 1/2 in head from snout tip, 1 to 1 1/6 in snout, interorbital 1 1/4 to 1 1/3 in orbit; maxillary reaches opposite hind orbital edge or slightly beyond, length from front end 1 4/5 in head from snout tip; mandibular barbel 1 2/5 to 1 2/3; teeth minute, in rather broad villiform bands in jaws, about 12 irregular rows transversely above and 9 below; interorbital 6 to 6 1/5,

low, nearly level, cavernous).
Gill rakers 5 + 24, lanceolate,
1 4/5 in orbit, twice gill filaments.

Scales (pockets) 135; 7 above,
12 below, 32 predorsal of which
21 forward until opposite hind
eye edge. Scales with complete
fine circuli.

D. II, 10 — 14 0?, second simple
ray slender, entire, filamentous,
2 4/5 to 3 1/4 in combined head and
body; height of second dorsal
2 1/5 in head; interdorsal space
1/3 of eye; A. 128?, much lower
than second dorsal; pectoral
rays I, 15, first simple ray
long and filamentous, 3 1/3 to
3 2/5 in total length of fish.

Light brown; muzzle pale.
Opercles light gray, edge of gill

vertical olive green bars, widest posteriorly. Entire back, sides and below with numerous small round green spots. Black median predorsal blotch. Top of head and snout olive green. Yellow stripe begins over eye, extends down on cheek, bordered each side with black and pale blue line. Lower side of head, breast and snout paler yellow than body. Mandible tip pale blue. Belly between ventral and anal whitish, margined by yellow line. Caudal portion of dorsal nearly uniformly green like bars on sides; tips of spines and rays greenish yellow, become chrome yellow posteriorly, narrow pale blue line next to yellow edge, then narrow black line. Anal base green like dorsal, margin pale yellow with submarginal yellow and blue stripe which wider than on dorsal, then black one adjoins. Base of caudal

opening dusky. Iris gray. Inside mouth and gill opening neutral black. Fins brown, dorsal darker.

Philippines.

U. S. N. M., No. 78208. Camp Overton Light, S. 26° E., 24.6 miles (lat. 8° 34' 48" N., long. 124° 1' 24" E.), off northern Mindanao. Depth not given. August 8, 1909. Albatross Collection (D. 5515). Length 335 mm. Type of Gadomus magnificus.

4843 and 4844. Biri Channel. June 1, 1909. Length 82 to 94 mm.

4855. Cagayanes Island. March 31, 1909. Length 64 mm.

3900. Cebu market. April 4, 1908. Length 71 mm.

2146. Cebu market. August 28, 1909. Length 71 mm.

3604. Danawan and Ti Amil Islands. September 26, 1909. Length 87 mm.

8134. Dasol Bay. May 9, 1909. Length 76 mm.

4813. Gomomo Island. December 3, 1909. Length 78 mm.

4710. Ligpo Point, Balayan Bay. January 18, 1908. Length 92 mm.

4883. Little Santa Cruz Island. May 28, 1908. Length 82 mm.

1264, 1277, 3592, 3640, 3641, 4710. Mactan Island, Cebu. March 25, 1909. Length 82 to 90 mm. Generally sulphur yellow, with 8 irregular

U. S. N. M., No. 78234. Paralypes of Gadomus magnifilis. Albatross Collection (D. 5201).

Limasawa Island (E.), S. 1° E., 14.80 miles (lat. 10°10' N., long. 125°4'15" E.), Hogod Bay, southern Leyte. In 554 fathoms. April 10, 1908. Length 235 mm.

Albatross Collection (D. 5423).

Cagayan Island (S.), S. 11° E., 4.8 miles (lat. 9°38'30" N., long. 121°11' E.), Jolo Sea. In 508 fathoms. March 31, 1909. Length 223 mm.

of lower side of body each with variable dark brown blotch, though blotches of costal region larger and more contrasted or darker. Black pre-dorsal saddle-like blotch little smaller than eye. Above eye less than eye-diameter white-bound, down through eye and across cheek to lower edge of preopercle, above broader than pupil and below narrower, also front and hind edges each with dark bordering line. Upper lip deep brown. Soft dorsal and anal broadly edged yellow, with black submarginal line shading into dark grey down on fin. Outer half of caudal pale, with median black transverse line expanded medially or somewhat crescentic in some specimens; fin yellowish basally, and in young dark transverse basal line. Pectoral fin light brownish, membranes of ventrally with some dark brown.

East Indies, Melanesia, Hawaii. The species is sometimes with variation in the dark vertical bands, as they may be irregular on one side and distant on the other side of the same individual. Sometimes these bands may be more waved than usual or two may be joined by a dark crossbar.

Bathygadus melanopterus (Gilbert)

Gadomus melanopterus Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 658, fig. 256, 1903 (1905) (type locality: near Kauai Island, 444 to 478 fathoms). V — Gilbert and — Brauer, Deutsch. Tiefsee Exped. (Valdivia), vol. 15, p. 394, 1906 (reference).

Nat. Mus., no. 100, vol. 1, p. 393, 1920 (diagnosis in key). — Fowler, Mem. Bishop Mus., vol. 10, p. 86, 1928 (compiled).

Depth 6 1/5; head 5 1/8, width 2 1/4. Snout 3 2/3 in head from snout tip; eye 4 2/5, 1 1/4 in snout, 1 1/10 in interorbital; maxillary reaches slightly beyond eye, length 1 4/5 in head from snout tip; long slender mandibular barbel 2 1/8; teeth minute, villiform, compact, in bands in jaws with upper wider;

Bathygadus melanopterus (Gilbert)

Gadomus melanopterus Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 658, fig. 256, 1903 (1905) (type locality: near Kauai Island, 444 to 478 fathoms). V— Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1917 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 393, 1920 (diagnosis in key). — Fowler, Mem. Bishop Mus., vol. 10, p. 86, 1928 (compiled).

Depth 6 1/5; head 5 1/8, width 2 1/4. Snout 3 2/3 in head from snout tip; eye 4 2/5, 1 1/4 in snout, 1 1/10 in interorbital; maxillary reaches slightly beyond eye, length 1 4/5 in head from snout tip; long slender mandibular barbel 2 1/8; teeth minute, villiform, compact, in bands in jaws with upper wider;

interorbital 4½, low, nearly level. Gill rakers 5 or 6 + 27, slender, lanceolate, 1/3 in eye; gill filaments 2/5 of gill rakers.

Scales 120 in median lateral or axial series, of which 22 forward of vent; 6 above, 10? below, 28? predorsal. Scales very caducous, most all fallen, equally large on head as on body. Scales without striae, circuli moderate, form angles on horizontal axis basally.

D. II, 9 — 11, second simple ray ending in long filament or about 2 7/8 of total fish; A. 100, rays all greatly lower than dorsal rays; pseudocaudal

Depth 1 1/2 to 1 3/5; head 2 4/5 to 3 2/5, width 1 7/8 to 2 1/10. Snout 2 4/5 to 3 in head; eye 2 3/5 to 2 7/8, equals snout, greater than interorbital in young & equal with age; maxillary halfway in snout, 4/11 in head; interorbital 2 4/5 to 3 1/8, broadly convex. Gill rakers 5 + 11, short points, 1/6 of gill filaments, which 1 1/2 in eye.

Scales 29 to 32 between gill-opening and caudal base; tubes 34 to 37 in lateral line; 7 or 8 scales above lateral line, 14 or 15 below. Scales with 11 to 15 basal radiating striae; apical denticles 64 to 137, with 16 to 18 series of basal elements transversely; circuli fine.

D. XIII-I, 22, I to 25, I, last spine 1 1/8 to 1 2/5 in head, eleventh ray 1 1/5 to 1 1/2; A. III, 17, I or 18, I, last spine 1 1/3 to 1 1/2, third ray 1 1/4 to 1 2/5; least depth of caudal peduncle 2 3/4 to 3 1/8; caudal 1 2/5 to 1 1/2, hind edge little convex; pectoral 1 to 1 1/8; ventral 2 4/5 to 3 1/8 in combined head and body.

Back brown with slight olive tint, abdomen, breast and lower surface of head pale to whitish. On back, four bands of dorsals, & deep brown vertical bands, mostly parallel, fourth to sixth widest and extend down half way in body depth. Scales between dark bands and within their areas, also all

narrow or slender, at least 3/4 of eye; pectoral rays I, 16 to I, 18, uppermost ending in long filament 2 3/4 in total length of fish; ventral I, 8, first ray also ends in filament to fin 3 1/3 in total fish, fin origin little before that of pectoral or first dorsal.

Pale brown generally. Iris grayish. Under surfaces of head and belly gray blue, opercular region and border of gill opening blackish. Inside mouth and gill opening black. Fins all dusky.

Hawaiian Islands. The trunk is noticeably shorter than the head, and both barbel and fin filaments are greatly developed.

Citharoedus punctato-fasciatus Kaup, Arch. Naturges., bund 26, abth. 1, 1860, p. 144 (Amboina).

Tetragnoptrus (Tetragnoptrus punctato-fasciatus Bleeker, Atlas Ichth. Ind. Neerl., vol. 9, 1877, p. 40, plate (12) 374, fig. 3 (Buru, Obi, Solor, Kimboina, Banda).

Chaetodon punctato-lineatus Gray, Cat. Fish. Gronow, vol. 2, 1854, p. 70. India.

Chaetodon multicinctus Garrett, Proc. Cal. Acad. Sci., vol. 3, 1865, p. 65. Hawaiian Islands.

— Günther, Journ. Mus. Godeffroy, bund 2-3, heft 5-6, 1874, p. 44, plate 34, fig. B (Honolulu).

U. S. N. M., No. 51606. Ukula Point, S. 82° 30' E. 10.2', vicinity of Kauai Island. In 444 to 478 fathoms. June 24, 1902. Albatross Collection (D. 4028). Length 273 mm. Type of Gadomus melanopterus.

Chaetodon punctatofasciatus Cuvier.

Chaetodon punctatofasciatus Cuvier, Hist. Nat. Poiss., vol. 7, 1839, p. 28. No locality. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 27 (type of Chaetodon punctato-lineatus Gray). — Günther, Cruise of Curaçoa, Brenchley, 1873, p. 410 (Timor, Moluccas). — Von Martens, Preuss. Exped. Ost Asien, 1876, p. 388 (Amboina). — Jordan and Veale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 34 (Manila). — Weber, Siboga Exped., band 65, 1913, p. 308 (Banda). — Fowler, Copeia, no. 58, June 18, 1918, p. 64 (Philippines). — Fowler and Bean, Proc. U. S. Nat. Mus., vol. 62, 1922, p. 56 (Cebu). — Ehl. Arch. Naturges., band 89, abth. A, heft 5, 1923, p. 100 (Amboina). — Fowler, Bishop Mus. Bull., no. 22, 1925, p. 27 (Honolulu). — Fowler and Ball, Bishop Mus. Bull., no. 26, 1925 (1926), p. 17 (Johnston Island).

Bathygadus micronema (Gilbert)

Melanobranchus micronema Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 661, fig. 258, 1903 (1905) (type locality: Pailolo Channel between Maui and Molokai, 753 to 787 fathoms). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 394, 1906 (reference).

Bathygadus micronema Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference); Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 380, 1920 (diagnosis in key). — Fowler, Mem. Bishop Mus., vol. 10, p. 85, 1928 (compiled).

Depth 6 4/5; head 5 1/5, width 2. Snout 3 1/4 in head from snout tip; eye 5, 1 1/4 in snout, 1 1/10 in interorbital; maxillary extends little beyond eye, length 1 2/3 in total head length; minute mandibular barbel scarcely evident at lower symphyseal facet; teeth very finely and minutely

villiform, upper band slightly broader than lower; interorbital 4 1/4, low, nearly level, though surface little uneven. Gill rakers 6 or 7 + 28, lanceolate, on first arch, 1 1/3 in eye; gill filaments. 7/5 gill rakers.

Scales 140 in medial or axial lateral series, of which 25 forward of vent; 6? above, 18 below, 30? predorsal. Scales small, thin, cycloid, very caducous, most all fallen. Scales on head apparently subequal with those on body. Scales simple, without striae; circuli moderate, complete, forming angles at horizontal axis basally.

D. II, 10 I 103, second simple ray filamentous, little longer than head or 4 1/3? in total fish; A.

Chaetodon maculatus Vauvage.

Chaetodon (Tetragonoptrus) maculatus Vauvage, Hist. Nat. Madagascar, Poiss., 1891, p. 259 (on Chaetodon tacheté Liénard, diagn. Soc. hist. nat. Maurice, 1839, p. 36. Mauritius).

D. XIII, 23; A. III, 18. Yellowish gray, with many small round black spots, forming 6 longitudinal lines obliquely down. Dorsal bound edged yellow each side. Caudal with blackish crescent.

(Vauvage.)

84, rays all much lower than dorsal; distinct pseudocaudal (broken), evidently 1/2 of eye; pectoral rays I, 17, fin 3 3/4? in total fish, upper ray ending in long filament; ventral rays I, 7, first ray ending in long filament to fin apparently long as pectoral.

Brownish. Opercular region of head, breast and belly dusky to swarthy. Iris gray. Inside mouth and gill opening blackish. Fins brownish.

Hawaiian Islands. Hudson's drawing of this species, as published by Gilbert, shows the upper jaw slightly longer, though exactly the reverse is true of the type, its lower jaw slightly protruding.

One example (with 43937 U.S.
N.M) from Mauritius, through
Colonel Nicholas Pike. Length 85 mm.

Further Hudson does not indicate the minute symphyseal barbel, which however would hardly show in his profile drawing. He does show what appears to be a barbel nearly half long as eye diameter and about opposite the front edge of the eye. This appears to me to be a torn strand of the anterior branchiostegal membrane, though in no sense a barbel. Gilbert does not appear to have noticed it as there is no reference to it in his text. In the species the head is nearly twice length of the trunk as measured to the vent.

Polynesia, Hawaii.

55482 U.S.N.M. Honolulu. Dr. O. P. Jenkins. Length 127 mm.

55548 U.S.N.M. Hawaiian Islands. Length 124 to 138 mm. 2 examples.

58521 U.S.N.M. Honolulu. E. L. Berndt. Length 95 mm.

U. S. N. M., No. 51643.
Mokuhooniki Islet, S. 51°, W. 20.7';
Pailolo Channel, between Maui
and Molokai Islands. Sn 753 to
787 fathoms. July 22, 1902.
Albatross Collection (D. 4094).
Length 235 mm. Type of
Melanobranchus micronema.

Chaetodon guttatissimus Bennett.

Chaetodon guttatissimus Bennett, Proc. Comm. Zool. Soc. Lndon, vol. 2, 1832, p. 183. Ceylon. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 26 (type; Ceylon). — Playfair, Fishes of Zanzibar, 1866, p. 34 (Zanzibar). — Day, Fishes of India, pt. 1, 1875, p. 106, plate 27, fig. 4 (type); Supplement, 1888, p. 786. — Ahl, Arch. Naturges., band 89, abth. A, heft 5, 1923, p. 100 (Mauritius).

Chaetodon miliaris (part) Day, Fauna British India, vol. 2, 1889, p. 7.

Differs from Chaetodon miliaris, with which Day places it, in that each scale has a black spot and spots greatly increased, due to size of scales along bases of soft vertical fins. Dark ocular band not extending entirely over cheek. Caudal with dark median line.

Bathygadus multifilis Günther

Bathygadus multifilis Günther, Rep. Voy. Challenger, vol. 22, p. 155, pl. 42, fig. B, 1887 (type locality: south of Philippines, 500 fathoms). — Goode and Bean, Oceanic Ichth., p. 420, 1895 (copied). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 394, 1899 (reference). — Jordan and Richardson, Philippine Journ. Sci., vol. , p. 58, 1910 (compiled).

Bathygadus (Gadomus) multifilis Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 23, 1928 (type).

Gadomus multifilis Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1917 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. (393) 406, 1920 (Lagonoy Gulf; Darvel Bay, Borneo; Gulf of Tomini, Celebes; 480 to 890 fathoms).

Bathygadus longifilis (not Goode and Bean) Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 6, p. 302, 1890 (Arabian Sea, 456 to 740 fathoms); ser. 6, vol. 8, p. 123, 1891 (off west coast Andamans, 683 fathoms); Cat. Deep Sea Fishes Indian Mus., p. 120, 1899 (Bengal Bay; west coast of Andamans; Arabian Sea; 459 to 740 fathoms). — Chun, Aus den Tief. Weltmeeres, p. 504, fig., 1900 (East Africa). — Brauer, Deutsch. Tiefsee Exped., Valdivia, p. 270, pl. 12, fig. 7, 1906 (west coast of Sumatra; east coast of Africa; 903 to 1362 meters).

Bathygadus nipponicus (Jordan and Gilbert)

Regania nipponica Jordan and Gilbert, Bull. U. S. Fish Comm., vol. 22, p. 605, fig., 1902 (August 1904) (type locality: Misaki Bay, 207 to 250 fathoms). Jordan, Tanaka, Snyder, Journ. College Sci., Tokyo, vol. 33, p. 410, 1913 (compiled).

Bathygadus nipponicus Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1917 (reference); Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 380, 1920 (diagnosis in key).

Depth 7 3/5; head 5, width 2 1/10. Snout 3 3/4 in head from snout tip; eye 5 1/5, 1 1/2 in snout, 1 1/2 in interorbital; maxillary reaches little beyond eye or opposite hind edge of orbit, length 1 9/10 in head from snout tip; no barbel; teeth villiform, even, in broad bands in jaws, upper band wider or of 8 to 10 irregular rows transversely and lower of 7 or 8 rows; interorbital 3 1/2 in head, low, unevenly convex. Gill rakers 5 + 18 on first arch,

lanceolate, 1 1/4 in eye; gill [redacted]
filaments 3/5 of gill rakers.

Scales 148 in lateral line, of which 27 forward of vent; 6 above, 16 below, 27? predorsal. Scales moderate, partially adherent, though many fallen. Scales cycloid, simple, without striae; circuli fine, numerous, each forms angle medially at horizontal axis basally.

D. II, 10—97 (ends of rays damaged); A. 90?; pseudocaudal small, of few rays, at least 2 1/2 in eye; pectoral rays I, 16, fin 1 3/4 in total head length; ventral rays I, 8, fin 2 2/5.

Drab or grayish, head, breast and belly not darker. Inside mouth and gill opening blackish.

Chaetodon quadrimaculatus Gray.

Chaetodon quadrimaculatus Gray, Zool. Miscellany, 1833, p. 33. Hawaiian Islands. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 13 (type). — Günther, Journ. Mus. Godeffroy, bound 2 — Heft 5 — 6, 1874, p. 38, plate 30, fig. A (Upolu; Hawaiian Islands). — Jordan and Evermann, Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903 (1905), p. 373, plate 49 (Honolulu). — Fowler, Bishop Mus. Bull., no. 22, 1925, p. 28 (Honolulu). — Fowler and Ball, Bishop Mus. Bull., no. 26, 1925 (1926), p. 17 (Johnston and Wake Islands).

Largely yellow. Dark orange ocular bar, with black and white bordering lines. Back dusky, with large whitish blotch below spinous dorsal and another below 2 of dorsal. Bluish longitudinal line on dorsals and anal.

Iris gray white. Fins brownish, dorsal and anal posteriorly and caudal dusky, also paired fins.

Japan. Known only from the type. The lateral line falls rather low above the anal fin. and though ends of first dorsal and paired fins broken off it is possible that they may have ended in filaments. The ends of all these fins are less definite than the original figure seems to show.

U. S. N. M., No. 50931. Oki Gawa, N. 49°; W. 7. 8 miles, off Honshu Island, Japan. In 207 to 250 fathoms. May 12, 1900. Albatross Collection (D. 3721). Length 590 mm. Type of Regania nipponica.

soft dorsal and anal. Caudal spotted at base.

9650. Vitiadan Island. September 28, 1909. Length 89 mm.

1135. Sulada Island. September 18, 1909. Length 94 mm.

842. Teomabul Island. September 18, 1909. Length 100 mm.

52513 U.S.N.M. Apia, Samoa. Bureau of Fisheries. Length 40 to 110 mm. 5 examples.

71681 U.S.N.M. Safa, Okinawa. Albatross Collection 1906. Length 100 mm.

83313 U.S.N.M. No locality, likely ~~Oceania~~ Fiji or Samoa? Wilkes Exploring Expedition. Length 64 to 100 mm. 4 examples.

Bathygadus spongiceps (Gilbert and Hubbs

Bathygadus spongiceps Gilbert and Hubbs, Bull. U.S. Nat. Mus., No. 100, vol. 1, p. (380) 381, fig. 1, 1920 (type locality: off northeast Borneo; off southern Luzon; off southeast coast of Luzon; 480 to 890 fathoms).

Bathygadus (Bathygadus) spongiceps Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 17, 1929 (compiled).

Depth 7 to 7 3/4; head 5 1/8 to 5 3/4, width 1 7/8 to 2. Snout 3 to 3 1/5 in head from snout tip; eye 6 to 7, 1 3/4 to 2 1/4 in snout, 2 to 2 1/5 in interorbital; maxillary reaches opposite hind eye edge, length 1 4/5 to 1 5/6 in head from snout tip; teeth subequal, in villiform bands in jaws of 7 or 8 irregular rows transversely above and 4 or 5 below; interorbital 3 to 3 1/6, rather low,

unevenly convex. Gill rakers 5 or 6 + 19 to 22 on first arch, lanceolate, 1 2/3 in eye; gill filaments 3/5 of gill rakers.

Scales 1 42 in medial or axial lateral series; 6 above, 12? below, 15? predorsal forward to occiput or opposite hind eye edge. Scales very caducous, most all fallen, present on head where apparently similar to rest of body. Scales simple, thin, without striae; circuli fine, complete.

D. II, 9 or II, 8 — 106, first dorsal height 2 3/4 in total head length; D. 95 (damaged), anterior rays apparently short; pseudocaudal indistinct;

678. Sablayan, Mindoro. December 13, 1908. Length 98 mm. Generally pale yellow, spots purplish blue, become more or less bronzed posteriorly. Outer dorsal edge white on black line, fin yellowish below; bluish bar through center of spinous membranes from fourth to tenth: anal edge black, very pale yellow above. Ocular band edged pale yellow above eye.

809. San Roque, Leyte Island. July 29, 1909. Length 105 mm. Generally dusky lemon, spots purplish blue becoming orange and brown below and posteriorly. Dorsal with white margin on black, more or less translucent bluish bar through center of spinous fin, anal terminally black on opaque lemon central bar. Dark brown shade along dorsal base, and yellowish on vertical portions of

pectoral rays $\frac{I}{=}$, 14 to $\frac{I}{=}$, 18, fin 2 1/8 in total head; ventral rays $\frac{I}{=}$, 8, rarely $\frac{I}{=}$, 7, fin 2 2/5 in total head.

Brown, head and belly blackish. Iris dark. Inside mouth and gill opening blackish. Vertical fins brownish, paired ones darker.

East Indies, Philippines. In this species the ventrals inserted a little in advance of first dorsal origin.

anal posteriorly. Black ocular band, margins yellowish above and purplish on cheeks. Forehead and snout dusky, sides of mouth yellow and chin dusky. Front dorsal spines to tenth black, tips white and white continued to vertical border of soft dorsal and black as very narrow submarginal line; upper part of incised spinous membrane yellow, with white or colorless band beneath. Outer half and front of anal spines black, continued as broad marginal band across soft fin, below yellow bar with whitish outer margin which continues on spinous membranes. Caudal pale chrome. Ventral pale straw with black dots on rays.

404. Port Pakapag. June 3, 1909. Length 78 mm.

U. S. N. M., No. 78210. Si Amil Island (N.), S. 82° W., 6.2 miles (lat. 4° 19' 54" N., long. 118° 58' 38" E.), vicinity of Darvel Bay, Borneo. In 890 fathoms. September 26, 1909. Albatross Collection (D. 5582). Length 390 mm. Type.

U. S. N. M., No. 78235. Six paratypes.

Albatross Collection (D. 5274). Malavatuan Island (N.), S. 73° 30' E., 17.50 miles (lat. 13° 57' 30" N., long. 120° 3' 25" E.), China Sea near southern Luzon. In 525 fathoms. July 16, 1908. Length 213 to 230 mm, 2 examples.

Albatross Collection (D. 5460). Sialat Point Light, N. 24° E., 8.2 miles (lat. 13° 32' 30" N., long. 123°

909. Maricaban Island. January 20, 1908. Length 97 mm.

4568. Mompog Island, Anabayan. March 3, 1909. Length 91 mm.

610. Murcielagos Bay. August 9, 1909. Length 90 mm.

4684. Nasugbu Bay. January 16, 1908. Length 101 mm. Generally pale canary yellow, white on belly and more dusky dorsally. Diffuse dusky about pectorals basally and above space between anal and ventrals, also below middle of spinous dorsal and soft dorsal posteriorly. Irregular rows of small roundish spots over entire surface, light bluish purple in central region becoming very dark dorsally and more or less orange over anal base. Chrome on soft dorsal posteriorly, caudal and caudal peduncle and soft

58' 06" E.), east coast of Luzon.
In 565 fathoms. June 10, 1909.
Length 298 to 330? mm., 2 examples.

Albatross Collection (D. 5467).
Atulayan Island (S.), S. 79° W.,
2.5 miles (lat. 13° 25' 27" N., long.
123° 37' 18" E.), east coast of Luzon.
In 480 fathoms. June 18, 1909.
Length 275 mm.

Albatross Collection (D. 5648).
North Island (S.), N. 87° E., 10.2
miles (lat. 5° 35' S., long. 122° 20' E.),
Buton Strait. In 559 fathoms.
December 16, 1909. Length 300 mm.

black band below which fin yellowish, continuation of yellow of spines; through center of spinous membranes beginning with fourth an opaque whitish spot forming sort of bar. Anal spines and terminal edge of fin black, below this pale sulphur bar, whitish on spinous membranes, basal half to $\frac{2}{3}$ of fin body color, which buff near vertical third of fin, having orange spots. Caudal uniform yellowish, except orange spots noted. Pectoral dusky hyaline. Ventral dusky sulphur.

1198 to 1201. Cabugan Island, Hinunangan. July 30, 1907. Length 102 to 107 mm.

200 to 201, 206. Cabugao Bay, Catanduanes Island. June 7, 1907. Length 48 to 96 mm.

8087. Malamipa Island. September 8, 1907. Length 104 mm.

Bathygadus sulcatus (Smith and Radcliffe)

Regania sulcata Smith and Radcliffe, Proc. U. S. Nat. Mus., vol. 43, p. 108, text fig. 1, pl. 22, fig. 3, 1912 (type locality: Cagayan Island, Jolo Sea, 508 fathoms).

Bathygadus sulcatus Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference); Bull. U. S. Nat. Mus., No. 100, vol. 1, p. (380) 390, 1920 (type; between Marinduque and Luzon; near Cagayan Island; off northern Mindanao; between Siquijor and Bohol; 340 to 530 fathoms).

Depth 7; head 4 2/3, width 2 1/3. Snout 3 3/5 in head from snout tip; eye 4 1/2, 1 2/5 in snout, 1 in interorbital; maxillary reaches opposite hind eye edge, length 1 4/5 in head from snout tip; no barbel; teeth in villiform bands, uniform, 10 to 12 transversely irregular series above,

lower bands narrower and transversely 7 or 8 irregular series; interorbital 5, low, unevenly convex. Gill rakers 5 + 16 on first arch, lanceolate, 1 3/4 in eye; gill filaments 1/2 of gill rakers.

Scales 154 in lateral line, of which 24 or 26 forward of vent, lateral line falling little below middle of body depth above anal; 6 above, 16 below; 38 predorsal. Scales very caducous, mostly fallen, thin, nearly or quite as large on head as on body. Scales entire, cycloid, without striae; circuli very fine, form angles at medial or horizontal axis basally.

depth 1 3/4 to 1 4/5; head 2 2/3 to 3 1/4, width 1 7/8 to 2 1/6. Snout 2 2/3 to 3 1/8 in head from snout tip; eye 2 3/5 to 3, greater than snout in young to 1 1/5 with age, greater than interorbital in young to equal with age; maxillary 2/3 to 3/4 in snout, 3 3/4 to 4 1/5 in head; interorbital 3 to 3 2/5, convex. Gill rakers 3 + 18, short points, 1/8 of gill filaments, which 1 1/2 in eye.

Scales 35 to 40 between gill opening and caudal base; tubes 32 to 33 in lateral line; 8 or 9 scales above lateral line, 16 or 17 below. Scales with 9 to 14 basal radiating striae; apical denticles 50 to 90, with 3 to 10 transverse series of basal elements; circuli fine.

D. XIII to XV, 20, I or 21, I, fourth spine 1 1/5 to 1 3/5 in total head length, fourth ray 1 1/5 to 1 1/2; A. III, 15, I, to 17, I, second spine 1 1/4 to 1 1/2, fourth ray 1 1/5 to 1 1/4; least depth of caudal peduncle 2 7/8 to 3 1/6; caudal 1 1/3 to 1 2/5, hind

D. II, 10 — 105, second simple ray (broken) 2 1/5? in total head length; A. 88, much lower than dorsal anteriorly; pseudocaudal rather long, slender, 1/2 of eye; pectoral rays I, 15, length 1 1/2 in head; ventral I, 8, fin 1 7/8 in head, origin before pectoral origin and forms inclined line to first dorsal origin, which most posterior of three.

Chocolate brown. Belly livid dark gray brown. Sides of head darks. Iris dark gray. Inside mouth and gill openings blacks, also branchiostegals. Mandible darks. Fins more or less darks to dusky.

Philippines. In this species the head is a little longer than the

Lepid
1—5—6, 1874, p. 47, plate 33, fig. B.)

trunk and the pectoral reaches a little beyond vent. Its coloration is noticeably darker.

U. S. N. M., No. 72925. Cagayan Island (S.), S. 11° E., 4.8 miles (lat. 9° 38' 30" N., long. 121° 11' E.), Jolo Sea. In 508 fathoms. March 31, 1909. Albatross Collection (D. 5423). Length 432 mm. Type of Regania pulcata.

— Weber, Siboga Exped., band 65, 1913, p. 306 (Kabaralang, Beo, Salibabu, Banda, Tuin, Rotti, Saman). — McCulloch, Austral. Zoologist, vol. 2, pt. 3, February 10, 1922, p. 91, plate 27, fig. 235c (New South Wales). — Kihl. Arch. Naturg., band 89, abth. A, heft 5, 1923, p. 104 (New Guinea, Jaluit, New Hannover, Amboina). — Fowler, Bishop Mus. Bull., no. 22, 1925, p. 34 (Samoa).

Tetragonoptrus citrinellus Bleeker, Verh. Tijds. Neêrl., deel 1, 1863, p. 234 (Ternate).

Chaetodon punctatus (Parkinson) Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. 21. Tahiti.

Chaetodon nigripes de Vis, Proc. Linn. Soc. New South Wales, vol. 9, 1885, p. 453. Queensland.

Chaetodon citrinellus var. semipunctatus Kihl, Arch. Naturg., band 89, abth. A, heft 5, 1923, p. 104 (on Chaetodon citrinellus var. Günther, Journ. Mus. Godeffroy, band 2-3,

Genus Trachyrinchus Giorna

Trachyrinchus Giorna, Mem. Accad. Imp. Turin, vol. 16, p. 178, 1803. (Atypic. Type Lepidoleprus trachyrinchus Risso, affixed tautotype.)

Trachyrhynchus Günther, Rep. Voy. Challenger, vol. 22, p. 152, 1887. (Type Lepidoleprus trachyrinchus Risso, tautotypic.)

Oxycephus Rafinesque, Indice Itt. Sicil., p. 13, 1810. (Type Oxycephus scabrus Rafinesque, monotypic.)

Lepidoleprus Risso, Ichth. Nice, p. 197, 1810. (Type Lepidoleprus trachyrinchus Risso, monotypic.)

Lepidozoma Risso, in Swainson, Nat. Hist. Animals, vol. 2, p. 261, 1838. (Type Lepidoleprus trachyrinchus Risso, monotypic.)

Body compressed, with short trunk and rather short tapering tail. Head large, conic, about wider as deep. Snout greatly extended forward in long sharp point and sharp lateral edge extends straight along suborbital. Eye advanced, usually with large orbit. Mouth inferior, small. Teeth in jaws in villiform bands, none on palate. Barbel present. Opercle small. Gill membranes scarcely united. Gills 4. Scales moderate, spinescent. Second dorsal well developed. Anal low throughout. Paired fins small, ventral often with long slender first ray.

Species few, noted especially for the row of large spine-like scales extending along each side of base of both dorsal and anal fins. The large orbit and prominent lateral ridges along the sides and front of the head, render a physiognomy extreme in appearance among the macrurids.

Trachyrinchus scabrus (Rafinesque)

Oxycephus scabrus Rafinesque, Indice Ittiol. Sicil., p. 13, pl. 1, fig. 2, 1810 (type locality: Sicily).

Trachyrhynchus scabrus Goode and Bean, Oceanic Ichth., p. 419, pl. fig. 349, 1895 (copied). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 392, 1906 (reference).

Lepidoleprus trachyrinchus Risso, Ichth. Nice, p. 197, pl. 7, fig. 21, 1810 (type locality: Nice).

Lepidoleprus trachirhynchus Risso, Hist. Nat. Eur. Mérid., vol. 3, p. 243, 1826 (Nice).

Lepidoleprus trachyrhynchus Cuvier, Règne Animal, vol. 2, p. 218, 1817 (reference); ed. 2, vol. 2, p. 337, 1829 (reference). — Bonaparte, Fauna

Italica, Pesci, vol. 3, pt. 1, fasc. ,
no pagination, 1841 (reference). —
Lassi, Innov. Ann. Soc. Nat. Bologna,
ser. 2, vol. 6, p. 392, 1846 (Genoa).
— Carus, Prodr. Medit., vol. 2, p. 584,
1893 (compiled).

Lepidosoma trachyrynchus Swainson,
Nat. Hist. Animals, vol. 2, p. 261, 1838
(reference).

Macrurus trachyrhynchus Günther,
Cat. Fishes Brit. Mus., vol. 4, p. 395,
1862 (compiled). — Canestrini, Fauna
Italia, Pesc., vol. 3, p. 159, 1874
(Sicily). — Capello, Piex. Portugal,
p. 32, 1880. — Moreau, Poiss. France,
vol. 3, p. 281, fig. 182, 1881 (Nice;
Antibes). — Vaillant, Exped. Sci.
Travailleur et Talisman, Poiss., p.

250, pl. 21 (scale), 1888. (off Morocco;
Soudan; Banc de Arguin; Cape
Verde Islands; 405 to 1495 meters).

Trachyrhynchus trachyrhynchus

Günther, Rep. Voy. Challenger, vol. 22, p. 152, pl. 41, fig. c, 1887 (nice). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 397, 1899 (reference). —

Murray and Hjort, Depths of the Ocean, p. 397, 1912 (south of England, 504 fathoms; off Morocco, 664 fathoms). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (name).

1078.

Trachyrinchus helolepis Gilbert

Trachyrhynchus helolepis Gilbert, Proc. U. S. Nat. Mus., vol. 14, p. 562, 1891 (type locality: Pacific coast of Central America, in 392 fathoms).

— Garman, Mem. Mus. Comp. Zool., vol. 24, p. 218 (397), 1899 (lat. 0° [illegible] S., long. 89° W., near Chatham Island, 392 to 421 fathoms). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 392, 1906 (reference). — Gilbert and Stubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference).

Trachyrincus helolepis Jordan and Evermann, Bull. U. S. Nat. Mus., No. 47, pt. 3, p. 2569, 1898 (copied). — Jordan, Evermann, Clark, Rep. U. S. Comm. Fish., pt. 2, p. 203, 1930 (reference).

Depth 6 7/8; head 3 1/3, width 2. Snout to eye 2 1/4 in head; eye 6 1/5, 2 2/3 in snout, 1 4/5 in interorbital; orbit 4 in head; 1 1/2 in snout, 1 1/10 in interorbital; maxillary reaches 4/5 in eye, length from front

end 2 7/8 in head; mandibular barbel 2 1/3 in eye; teeth even, in villiform bands in jaws, of 7 or 8 irregular series; interorbital 3 2/3 in head, low, level or nearly flat. Gill rakers 4 + 19 on first arch, lanceolate, rather robust, short, 2 1/4 in gill filaments, which 2 1/4 in eye.

Scales 135 in lateral line to pseudocaudal; 4 above, 18 below, 35 predorsal of which 16? forward till opposite hind upper vertical edge of preopercle. Each scale with strong median spine, with 2 smaller auxilliaries; circuli fine, basal. Ridge of scales beginning each side of occiput extends back along each side of dorsal fin bases, these with larger spines.

787 to 789, 9656 [1631]. Legoje Point, Catanduanes Island. June 10, 1909. Length 94 to 101 mm.

499 to 501 [5-73]. Biri Channel, Balicuatro Island. June 2, 1909. Length 85 to 99 mm. Pale brassy yellow, nearly silvery below. Dorsal bar slightly narrower than eye, margined each side by narrower greenish yellow stripe above eye. Forehead and top of snout dusky. Side of body with rows of lavender spots, one on center margin of each scale, becme orange on caudal peduncle and caudal fin and yellowish on soft dorsal and vertical anal edge; somewhat rosy on last 2 or 3 rows below. Front of dorsal spines black, top of sixth and following white, continued as narrow white band on edge of soft dorsal, resting on narrow

D. II, 96?, second simple ray entire, second branched ray 4 4/5 in head; interdorsal space 1/6 of eye; A. 95?; fin height 8 in head; pseudocaudal small; pectoral rays I, 16, fin 3 1/10 in head; ventral rays I, 5, fin 4 1/2.

Dark brown, head paler. Inside mouth brown and gill opening inside blackish brown. Iris pale. Fins more or less brown, with dusky to dark brown.

Eastern Pacific.

U. S. N. M., No. 48205. Lat. 00° 29' S., long. 89° 54' 30" W., Galapagos Islands. In 392 fathoms. April 15, 1888. Albatross Collection (D. 2818). Length 448 mm. Type of Trachyrhynchus helolepis Gilbert.

edge little convex; pectoral 1 to 1 1/8; ventral 1 to 1 1/8.

Body dull brown, paler to whitish beneath. Each scale on side of trunk and tail with a median blue green to gray small rounded spot, following courses of scales all more or less inclined rows above median body axis. Blackish brown band from just before spinous dorsal, joining its fellow, down to eye and across lower cheek to gill opening, but not on chest; above eye with marginal yellowish line in front and behind. Upper lip deep brown. Fins pale, except as dark band crosses vertically. Fins all largely pale brownish. Soft dorsal with narrow deep brown submarginal line. Anal with lower edge black and submarginal yellow band. Paired fins tinged yellowish.

Zanzibar, Ceylon, East Indies, Philippines, Riu Kiu, Polynesia, Hawaii.

Trachyrinchus longirostris (Günther)

Macrurus longirostris Günther, Ann. Mag. Nat. Hist., ser. 5, vol. 2, p. 23, 1878 (type locality: north east of New Zealand, 700 fathoms).

Trachyrhynchus longirostris Günther, Rep. Voy. Challenger, vol. 22, p. 153, pl. 41, fig. B, 1887 (types). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 397, 1899 (reference). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 392, 1906 (reference). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference).

Trachyrinchus longirostris Waite, Rec. Canterbury Mus., vol. 1, no. 1, p. 17, April 25, 1907 (reference).

Trachyrinchus murrayi Günther

Trachyrhynchus murrayi Günther, Rep. Voy. Challenger, vol. 22, p. 153, pl. 41, fig. a., 1887 (type locality: Faroe Channel, 555 fathoms). — Goode and Bean, Oceanic Ichth., p. 418, 1895 (copied). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 397, 1899 (reference). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 392, 1906 (reference). — Murray and Hjort, Depths of the Ocean, p. 397 (fig. 269 copied), 1912 (Faroe-Shetland Channel; Faroe Banks, 840 meters).

— Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 142, 1916 (reference).

Trachyrinchus longirostris (Günther)

Genus Lyconus Günther

Lyconus Günther, Rep. Voy. Challenger, vol. 22, p. 158, 1887. (Type Lyconus pinnatus Günther, monotypic.)

Body compressed, with trunk long as or longer than head and ending in long, compressed, tapering tail. Head compressed, small. Snout short. Eye large. Mouth cleft wide, terminal. Not mandibular barbel. Both jaws with series of wide set unequal teeth, 2 in front above, canine like, though not so large as lower teeth. Vomer with single canine tooth each side. Head with thin bones. Gill membranes not united. Gills 4. Pseudobranchiae present. Branchiostegals 7. Scales very small, cycloid, deciduous. Bones of head with narrow muciferous channels, except on top between eyes. Continuous dorsal fin on back to end of tail, some anterior

rays prolonged. Anal long, extends from vent to end of tail. No caudal. Pectorals long, slender. Ventrals thoracic, moderate.

Lyconus pinnatus Günther

Lyconus pinnatus Günther, Rep. Voy. Challenger, vol. 22, p. 158, pl. 42, fig. C, 1887 (type locality: South Atlantic in mid ocean). — Goode and Bean, Oceanic Ichth., p. 425, 1895 (copied). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 392, 1906 (reference). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 143, 1916 (name).

Lyconus brachycolus Holt and Bryne

Lyconus brachycolus Holt and Bryne,

— Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 143, 1916 (name).

Genus Squalogadus Gilbert and Hubbs

Squalogadus Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. (143) 156, 1917. (Type Squalogadus modificatus Gilbert and Hubbs, orthotypic.)

Body large and massive forward, long tail tapering slenderly. Head ellipsoid, rounded, cavernous and flabby, without ridges, greatly exceeding very short trunk. Snout globose, massive. Eye small, lateral, high, advanced. Mouth small, inferior, behind eye. No barbel. Teeth minute, in bands in jaws only. Interorbital wide, high and convex. Lateral line with a few scattered pores. Gills 4, on short arches, first free, without fold of membranes, slit behind last. Gill rakers slender, lanceolate. Pseudobranchial short. Gill membranes free from isthmus, joined anteriorly. Branchiostegals 7. Scales small, finely spidescent, irregular on head.

dorsal and anal long, rather low, confluent. ~~with very minute and rudimentary pseudocaudal.~~ Paired fins small.

Lqualogadus modificatus Gilbert and Ttubbs

Lqualogadus modificatus Gilbert and Ttubbs, Proc. U. S. Nat. Mus., vol. 51, p. (143)56, pl. 8, fig. 2, 1916 (type locality: Bungo Channel, off Kyushu, 720 fathoms).

Depth 4 2/5; head 3, width 2 1/5. Lsnout 3 2/5 in head, subglobose; eye 10, 3 2/5 in snout, 4 1/3 in interorbital; front end of mandible begins opposite hind eye edge; maxillary length from front end 4 in head; preoral length 2 3/5; teeth minute, even, form rather wide upper band in jaws, lower inconspicuous and less than 1/4 width of upper; interorbital 2 1/2 in head, flabby, generally convex. Gill rakers 6+12,

slenderly lanceolate, equal eye;
gill filaments 1/3 of gill rakers.
Scales 135? in lateral line;
12 above, 40? below, 78 predorsal.
Scales on head larger than on
body, all finely velvety to touch
due to minute spinules. Scales
with 12 or more minute spinules
in opercular area apically;
circuli moderately fine.

D. 118, low, begins slightly
before hind edge of gill opening;
A. 97, fin little lower than
dorsal; apparently no pseudocaudal;
pectoral rays (damaged) 25,
fin 3 1/2? in head; ventral rays
5, at least 3/4 of eye.

Chocolate brown. Iris dark
neutral gray. Jaws and edge
of gill opening dusky to nearly

Matsuura, Prelim. Cat. Fish. Mus. Tokyo, 1895, p. 53. — Jatzow and Lenz, Abhandl. Senckenberg. Nat. Ges., band 21, heft 1, 1897, p. 502 (Zanzibar). — Jordan and Fowler, Proc. U. S. Nat. Mus., vol. 25, 1902, p. 531 (Naha, Okinawa). — Jordan and Richardson, Bull. Bur. Fisher., vol. 27, 1907 (1908), p. 269 (Cayagancillo). — Regan, Ann. Durban Mus., 1908, p. 245 (Kosi Bay). — Gilchrist and Thompson, Ann. South Af. Mus., vol. 6, pt. 2, 1908, p. 159 (Natal). — Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 442 (Tanegashima), p. 510 (Okinawa). — Pellegrin, Bull. Soc. Zool. France, vol. 39, 1914, p. 227 (Nahambo, Madagascar). — Mc Culloch, Australian Zoologist, vol. i, pt. 3, February 10, 1922, p. 91 (Iluka, New South Wales). — Mc Culloch, Records Austral. Mus., vol. 14, pt. 1, 1923, p. 3 (Clarence River and Port Dennison, Queensland). — Fowler, Bishop Mus. Bull., no. 22, 1925, p.

neutral black. Breast and belly dusky. Inside mouth and gill opening blackish. Fins more or less dusky.

Japan.

U. S. N. M., No. 76864.

In 720 fathoms.
Albatross Collection (D. 4956).
Length 314 mm. Type.

vol. 2, 1860, p. 6 (Mauritius, China, Amboina, ~~China~~, Ameiteum). — Guichenot, Notes J. Reunion, vol. 2, 1862, p. 26. — Kner, Reis. Novara, Fisch., 1865, p. 97 (Sydney and Paynipet Island). — Capello, Jorn. Sci. Soc. Lisboa, 1871, p. 199 (Mozambique). — Günther, Journ. Mus. Godeffroy, band 1, 1873, p. 30, plate 26, fig. B. (Hawaii). — Castelnau, Res. Fish. Austral. (Records Phila. Exhox.), 1875, p. — (Cape York, Queensland). — Von Martens, Preuss. Exped. Ost. Asien, 1876, p. 388 (Amboina). — Günther, Philos. Trans. Roy. Soc. London, vol. 168, 1879, p. 470 (Rodrigues). — Meyer, Ann. Soc. Espan. Hist. Nat. Madrid, vol. 14, 1885, p. 17 (Manado, Celebes; Nias, Sangi). — Vaillant, Nouv. Arch. Mus. Paris, tome 3 (series 3), 1893, p. 57 (Palawan). — Elera, Cat. Faun. Filip., vol. 1, 1895, p. 485 (Luzon, Cavite, Santa Cruz). — Ishikawa and

Genus Macrouroides Smith and Radcliffe

Macrouroides Smith and Radcliffe, Proc. U. S. Nat. Mus., vol. 43, p. 139, 1912.
(Type Macrouroides inflaticeps Smith and Radcliffe, orthotypic.)

Body compressed, trunk very short. Tail strongly compressed, attenuated, slender. Head ellipsoid, very soft, cavernous, without very distinct ridges. Snout subconic, of swollen appearance, projects well before mouth. Eye lateral, at first third in head. Mouth inferior, horizontal, lower jaw included. Premaxillaries protractile. Teeth villiform, in narrow bands in jaws. Gill rakers small. No pseudobranchiae. Vent well forward, close before front of anal. Each scale with single median spine and 1 or 2 lateral minute spinules on same scale. Vertical fins low, continuous.

[illegal] Affinity Sheet
[illegal] Forwarding
[illegal] Work

[illegal] nd Radcliffe

Ina[illegal] nd Radcliffe,
Pro[illegal] .139, pl.
31, [illegal] Batan
Jr.[illegal] 408
Jat[illegal] Stubbs,

Proc. U. S. Nat. Mus., vol. 51, p. 143, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 408, 1920 (type).

Depth 4 1/5; head 3 1/8, width 3 1/5. Snout 3 2/5 in head; eye 11 1/2, 3 2/5 in snout, 3? in interorbital; maxillary begins slightly before eye and extends well posterior, length from front end 3 in head; teeth small, uniform, villiform, in narrow bands of only 2 or 3 irregular rows along jaw edges; no mandibular barbel; interorbital 3 4/5? in head, though owing to loose flabby condition of head scarcely delimited. Gill rakers 3+17 on first arch, short, obtuse,

Afterthought sheet

for Evening

or another in morning

Viola

Macrouroides inflaticeps Smith and Radcliffe

Macrouroides inflaticeps Smith and Radcliffe, Proc. U. S. Nat. Mus., vol. 43, p. 139, pl. 31, fig. 2, 1912 (type locality: Batan Island, Lagonoy Gulf, Luzon, 408 fathoms). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 143, 1916 (reference); Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 408, 1920 (type).

Depth 4 1/5; head 3 1/8, width 3 1/5. Snout 3 2/5 in head; eye 11 1/2, 3 2/5 in snout, 3.? in interorbital; maxillary begins slightly before eye and extends well posterior, length from front end 3 in head; teeth small, uniform, villiform, in narrow bands of only 2 or 3 irregular rows along jaw edges; no mandibular barbel; interorbital 3 4/5.? in head, though owing to loose flabby condition of head scarcely delimited. Gill rakers 3 + 17 on first arch, short, obtuse,

compressed, 1/2 of gill filaments, which 1 1/2 in eye.

Scales minute, more or less adherent, each with single medial minute spinule, also with 1 or 2 minute lateral spinules on same scale; circuli large, complete.

D. 107, begins near nape. above gill opening, low, apparently more or less uniform and continuous; A. 87, like dorsal, only slightly higher, fin begins ~~over~~ also little posteriorly or opposite middle of pectoral; pectoral rays I, 15, fin 3 1/6 in head.

Uniform dark clove brown. Iris gray.

Philippines.

Bleeker, Verhand. K. Akad. Amsterdam, deel 18, no. 3, 1879, p. 1 (Mauritius).

Chaetodon (Anisochaetodon) auriga Klunzinger, Fisch. Roth. Meer., 1884, p. 56.

Chaetodon setifer Bloch, Naturg. Ausl. Fisch., band 7, 1793, p. 101, plate 325, fig. 1. No locality (Collection John). L.c., band 9, 1795, p. 101, plate 425, fig. 1. — Schneider, Syst. Ichth. Bloch, 1801, p. 225 (Tranquebar). — Shaw and Nodder, Nat. Miscellany, vol. 14, 1802, plate 551 (Indian Seas). — Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. 76 (Mauritius, Borabora). — Lesson, Voy. Coquille, Poiss., vol. 2, pt. 1, 1830 (1831 ——); p. 175, plate 29, fig. 2 (Borabora). — Valenciennes, Règne Animal Cuv. Ill. Poiss., 1839, plate 38, fig. 1 (Mauritius). — Jenyns, Zool. Voy. Beagle, Fish., 1842, p. 61 (Keeling Islands). — Richardson, Ichth. China Jap., 1846, p. 246 (China). — Günther, Cat. Fish. Brit. Mus.,

U. S. N. M., No. 72950. East Point (Batan Island), S. 36° E., 9.2 miles (lat. 13° 23' 15" N., long. 124° 00' 30" E.), east coast of Luzon. In 408 fathoms. June 4, 1909. Albatross Collection (D. 5450). Length 147 mm. Type.

Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 96 (Balut). — Beaufort, Bijd. Dierk. Amsterdam, deel 19, 1913, p. 124 (Dorong, New Guinea). — Weber, Siboga Exped., band 65, 1913, p. 303 (Talibabu, Taleyer, Banda, Tual, Rotti). — Fowler, Copeia, No. 58, June 18, 1918, p. 64 (Philippines). — Abl, Archiv. Naturg., band 89, abth. A, heft 5, 1923, p. 147 (Indian Ocean, Hawai, Hawaii, Samoa, New Pommerania, Jaluit, Matupi?, New Guinea, Amboina, Tranquebar, Radak, Tsingtau, Mauritius, Madagascar, Mozambique, Dar es Salam, Mikandi, Red Sea).

Chetodon auriga Bonnaterre, Tabl. Ichth., 1788, p. 90 (Red Sea).

Tetragonoptrus (Rinophora) auriga Bleeker, Atlas Ichth., vol. 9, 1878, p. 47, plate (2) 375, fig. 4 (Sumatra, Java, Cocos, Celebes, Sangi, Flores, Solor, Timor, Halmahera, Ternate, Buru, Ceram, Amboina, Batjan, Goram, Banda). —

Genus Cynomacrurus Dollo

Cynomacrurus Dollo, Proc. Roy. Soc. Edinburgh, vol. 29, p. (316) 317, 1909. (Type Cynomacrurus piriei Dollo, monotypic.)

Mouth terminal. Premaxillaries teeth unequal, in narrow band separated by interspace from marginal series of teeth, one of which enlarged to form anterior lateral canine. Mandibular teeth uniserial. No barbel. Branchiostegals 6. No pseudobranchiae. Second dorsal ray spinous, slender, smooth. Anal not much higher than second dorsal. Ventral with filament. Vent ~~medianad of~~ immediately before anal.

Cynomacrurus piriei Dollo

Cynomacrurus piriei Dollo, Proc. Roy. Soc. Edinburgh, vol. 29, p. (316) 321, 1909 (type locality: lat. 71°50'S., long. 23°30'W., Weddell Sea, Antarctic Ocean, 2102 meters). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 143, 1916 (name).